



CrossTalk

June 2024

65 Years Of Service To Amateur Radio & Our Community

Issue 65 : 06

A 2024 Club Officers

President :	Jonathan Pearce, WB2MNF	Trustees - 4 Year Term	
Vice President :	Ronald Block, NR2B	Carl Wittig, N2CRW	(2021-2024)
Treasurer :	John O'Connell, K2QA	Charles Lanard, KD2EIB	(2022-2025)
Recording Secretary :	John Zaruba Jr, K2ZA	Sheldon Parker, K2MEN	(2023-2026)
Corresponding Secretary :	Michael Resnick, N2WOQ	Len Rust, W2LJR	(2024-2027)

Directors - 3 Year Term

Jeffrey Garth, WB2ZBN	(2022-2024)	James Wright, N2GXJ	(2023-2025)
Frank Romeo, N3PUU	(2022-2024)	Al Arrison, KB2AYU	(2024-2026)
Chris Prioli, AD2CS	(2023-2025)	Bill Price, NJ2S	(2024-2026)

Balloon Launch : Saturday, June 8, 2024
W2MMD Clubhouse

General Membership Meeting
Wednesday, June 5, 2024 @ 1900 Hours
Pfeiffer Community Center

Join ZOOM Meeting Link : <https://bit.ly/44P4HCU>

Tech Saturday Forum
Saturday, June 8, 2024 @ 0900 Hours
Saturday, June 15, 2024 @ 0900 Hours
W2MMD Clubhouse

GCARC TechNet ZOOM Forum
Every Monday @ 1930 Hours

Join ZOOM Meeting Link : <https://bit.ly/3K8bWwj>

License Testing Session
Thursday, June 13, 2024 @ 1900 Hours
W2MMD Clubhouse

Board of Directors Meeting
Wednesday, June 19, 2024 @ 1900 Hours
W2MMD Clubhouse

ARRL Field Day
Saturday & Sunday, June 22 - 23, 2024

Tuesday Afternoon 2M Net @ 1200 Hours
Thursday 2M Net @ 2000 Hours

Tuesday & Thursday 10 Meter Net @ 1930 Hours

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*Celebrating 65 Years Of
Service To Amateur Radio
& Our Community*

*ARRL Affiliated & Special
Services Club*

ARRL Field Day 2024

Ham Radio Open House!

Come Visit During The Greatest On-Air Event Of The Year!

What : Radio Field Day, National 24-Hour Operating Event



**Where : Gloucester County 4H Fairgrounds
235 Bridgeton Pike (Route 77), Mullica Hill, NJ**

**When : Saturday, June 22, 2024 @ 4-6pm
Open House**

**Curious about ham radio? This is the event for you!
Family Friendly! Visitors Welcome!**

What might you see? Come on out and see for yourself how far a radio wave might travel on just 100 watts and a piece of wire for an antenna, and how digital technologies are transforming this into a growing hobby shared by over 750,000 licensed enthusiasts in the United States alone. During this event, FCC licensed amateur radio operators (Hams) will be setting up with off-the-grid power and portable radios in the field to establish voice, digital, and code connectivity with thousands of other hams setting up to do the same, both here in the Philadelphia area, and all over the United States and Canada this same weekend.

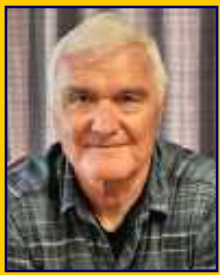
What's the goal? To learn how to operate in abnormal situations and in less than optimal conditions as training to meet the challenges of emergency preparedness, while showcasing the capabilities of Amateur Radio to be able to get through when all else may fail, such as following a hurricane, or other disaster, where infrastructure we rely on daily, such as cell phone service and electricity from the power grid, may not be available.

And to have Fun!

Hope to see you at the Open House!

Present By : Gloucester County Amateur Radio Club

**Gloucester County Amateur Radio Clubhouse Site • www.w2mmd.org
Gloucester County 4-H Fairgrounds • 235 Bridgeton Pike (Route 77) • Mullica Hill, NJ 08062
GPS : 39.717000°, -75.209950°**



President's Letter

Jon Pearce, WB2MNF



June 2024

May held an outstanding schedule of activities for the **Gloucester County Amateur Radio Club**, but June looks to be even more exciting. Major activities are scheduled for almost every weekend along with a repeat of last month's outstanding speaker at the General Membership Meeting. Here's what's coming up.

Field Day - June 22-23, 2024

The major event, of course, is the GCARC Field Day on June 22-23. This is an annual event in which Amateur Radio operators across North America set up temporary stations in public places and contact as many other stations as possible in 24 hours. It is a test of emergency preparedness, technical skills, and operating endurance. It is also a lot of fun and a great way to promote our hobby to the community. This year we will be operating at least eight stations from the Clubhouse grounds, using various modes and bands. We will have generators, batteries, and solar panels to power our equipment. We will also have tents, tables, chairs, and refreshments to make our stay comfortable.

This is a great opportunity for all Club members to come out and see the operation and also possibly operate a Field Day station. Whether you are a seasoned veteran or a beginner, there will be something for you to learn and enjoy. The event begins at 2:00 pm on Saturday afternoon, with set up starting earlier that morning.

Balloon Launch - Saturday, June 1, 2024

Another exciting activity is scheduled to take place several weekends before Field Day. On Saturday, June 1st, weather permitting, we will launch our first high-altitude balloon from the Clubhouse grounds. The balloon will carry a WSPR transmitter that will send out signals on the 20 meter HF band. This will allow us to track its position and altitude as it travels around the world. We hope that it will complete at least one full circumnavigation - some balloons have done multiple circuits around the globe before ultimately failing. This is a great opportunity to experiment with radio propagation, aerodynamics, and telemetry. It is also a fun way to showcase our hobby to the public and inspire the next generation of Amateur Radio enthusiasts.

This is the first of two balloons that the GCARC plans to launch this year before we start working in the fall with the **Woodruff Middle School** on launching their own ham-equipped balloons and performing some STEM-related projects involving many areas related to radio, atmospheric physics and lots of other areas. Please join us for the launch and follow the balloon's journey online. Watch the e-mail reflector for late-breaking information about this launch and see the article on page 13 in this issue of CrossTalk about this project.

More Antenna-Building Sessions - June 8 and 15, 2024

Our next Tech Saturday project will be the building of the **Ed Fong WB6IQN DBJ-1 VHF/UHF collinear antenna**. Constructed from twinlead and coax, this antenna provides decent performance on the 2m and 70cm bands. Due to the number of signups and the capacity of the Clubhouse this event will occur on both Saturdays June 8th and June 15th. Signups for this session are already closed, but it might be repeated later if there's sufficient interest.

President's Letter - Continued on page 4

ARRL June VHF Contest - June 8-10, 2024

The June VHF contest offers an opportunity to see the new VHF equipment and operation. While VHF and UHF operation is still limited because of the lack of antennas there are still opportunities to make contacts using the existing temporary setup. If you're in the Clubhouse area during that period come check out the new gear in action.

May Activities

In May, the GCARC had an eventful month with engaging activities. **Spencer Webb W2SW** delivered an outstanding presentation on the basics of antenna design, providing valuable insights to Club members. Following that, about 14 participants were involved in the Tech Saturday Forum building and testing project focused on creating and tuning a 70 cm ground plane antenna. The hands-on experience allowed members to apply their knowledge and enhance their practical skills.

Additionally, during the Monday night TechNet session, **Jim Wright N2GXJ** delved into the world of antenna modeling software, offering a deeper understanding of how to optimize antenna performance. These activities not only fostered learning but also strengthened the sense of community within the Club.

There's something happening almost every weekend at the Clubhouse! Hope to see you there and at all of the June events.

73 de Jon WB2MNF

A vibrant, colorful poster for the 'Soul Cruisers and 40 North Music Festival'. The central text 'MUSIC FESTIVAL' is in large, bold, blue letters, with a guitar neck graphic integrated into the letter 'I'. Below this, a large blue circle contains the date 'JUNE 1st' and the time '5pm-10:30pm'. The location 'OWENS PARK' is written below the circle, along with the 'Rain Date June 2nd'. The poster is decorated with musical notes, a guitar, and fireworks. Text on the left lists the 'Main Stage' as 'Soul Cruisers and 40 North' and the '2nd Stage' as 'Shayds of Gray'. It also mentions '100+ Vendors', a 'Large Food Court', and 'Amusements for all ages'. A list of 'Ride Wrist Bands' prices is provided: 1 for \$15, 2 for \$25, 3 for \$40, and 4 for \$50. At the bottom, it says 'Please: No Bikes or Dogs'. On the right, it states 'Sponsored by: Parks and Rec Commission' and provides the address '700 North Tuckahoe Road, Williamstown, NJ' in a yellow box.

Main Stage:
Soul Cruisers
and 40 North

2nd Stage:
Shayds of Gray

MUSIC FESTIVAL

Fireworks 10pm

JUNE 1st
5pm-10:30pm
OWENS PARK

Rain Date June 2nd

100+ Vendors
Large Food Court
Amusements for all ages

Ride Wrist Bands
1 for \$15
2 for \$25
3 for \$40
4 for \$50

Please: No Bikes or Dogs

Sponsored by:
Parks and Rec Commission

700 North Tuckahoe Road
Williamstown, NJ

Welcome New Club Members :

Diane Amico, an Associate Member who lives in Vineland, NJ.

Kerri Lynn Caguiat, KE2DKD, a Technician Class who lives in Sicklerville, NJ.

William DeCuzzi, KD2KZW, (Returning Member), a Technician Class who lives in Runnemede, NJ.

Anish James, an Associate Member who lives in Mount Laurel, NJ.

Phillip Lizzi, AD2HU, an Amateur Extra Class who lives in Deptford, NJ. (Phil passed all 3 exams in 1 session)

Angela Metzger, an Associate Member who lives in Vineland, NJ.

Linda Murphy, KD2RVH, (Returning Member), a Technician Class who lives in Runnemede, NJ.

Ronald Newman, an Associate Member who lives in Millville, NJ.

Rosemarie Newman, an Associate Member who lives in Millville, NJ.

Sheree Revilla, an Associate Member who lives in Woodbury, NJ.

Thomas Schmitt, an Associate Member who lives in Franklinville, NJ.

Jacob Scholz, an Associate Member who lives in Williamstown, NJ.

David Strout Sr, W2YC, (Returning Member), an Amateur Extra Class who lives in Williamstown, NJ.

Rose Williams, an Associate Member who lives in Audubon, NJ.

We are glad to have you as members of the Club and hope to see you regularly at Club meetings, events, and activities. Hope to see you at the June 5th General Membership Meeting , either in-person or on ZOOM, the June 8th Tech Saturday Forum, the Monday Night GCARC TechNet ZOOM Forum, the Dinner @ The W2MMD Clubhouse on June 26th.

We also hope to **“SEE”** you on the **“AIR”** on the following nets :

- Sunday Night Skywarn Net @ 1930 Hours and the Sunday Night ARES Net @ 2000 Hours.
- Tuesday Afternoon Net @ 1200 Hours.
- Tuesday & Thursday Night 10M Rag Chew Nets @ 1930 Hours on 28.465 or 28.475 MHz.
- Thursday Night Rag Chew Net @ 2000 Hours.

All 2 Meter nets are on our 147.180 MHz (PL 131.8) repeater or on EchoLink W2MMD-R.



General Membership Meeting

Wednesday, June 5, 2024 @ 1900 Hours

Pfeiffer Community Center

Simulcast Live Via ZOOM : **Meeting ID : 943 0211 9674; Passcode : 843147**

Join ZOOM Meeting Link : <https://bit.ly/44P4HCU>

Go to : www.w2mmd.org to download the ZOOM log-on instructions PDF



Irreverent Antennas : Make An antenna Out Of Anything

Last month our guest speaker, **Spencer Webb, W2SW**, discussed the dipole antenna, one of the simplest antennas, showing it's broad-side doughnut shaped radiation pattern with the current peak centered around

the feed-point. Its resonance was demonstrated by a colleague using the "sloshy demo" where a tube partially filled with a colored liquid was tilted from the horizontal at varying speeds showing non-resonance (antenna too long or too short; liquid at the ends) and then resonance (just right). The photo to the right shows most of the liquid (representing current) in the middle of the tube signifying resonance.

At the May Tech Saturday Forum, we constructed and tuned a simple 70cm ground plane antenna similar to the one pictured on the right suspended in Spencer's attic.

This month, we have invited Spencer back to continue the Irreverent Antenna discussion. One of his many talents is to translate complicated non-visual antenna theory in simple visual terms. So, your challenge is to create a question about any aspect of an antenna so that Spencer can answer it and educate all of us. Remember, the only dumb question is one that was not asked.

At this month's Tech Saturday Forum, we will build a practical 2M/70cm dual-band J-pole antenna. This end-fed omnidirectional antenna uses a shorted quarter-wave parallel transmission line stub for matching. My question is :

How does the tuning stub achieve a match for 50Ω coax?

What is your question???

Please join us for this most unconventional and irreverent learning opportunity. See you there!



Advanced SMT Soldering Class

Monday, July 8, 2024 - W2MMD Clubhouse

**For More Information & To Register, Go To :
<https://gloucestercountyarc.weebly.com/advanced-smt-class.html>**

GCARC TechNet ZOOM Forum

GCARC TechNet ZOOM Forum is scheduled to be available every Monday Night until December 30, 2024.

There will not necessarily be a topic scheduled every Monday Night, but the opportunity is available to schedule succeeding topics of interest on consecutive Monday Nights.

Every Monday @ 1930 Hours

Forum Topic : *Steve Farney, W2SEF : WSJT-X/FT8 : June 3 & 10, 2024*

Go to : <https://gloucestercountyarc.weebly.com/gcarc-tech.net.html>
for TechNet Information Resources and ZOOM Instructions

Meeting ID : 933 9943 3123 ; Passcode : 800835
Join ZOOM Meeting Link : <https://bit.ly/3K8bWwj>



**Gloucester County Amateur Radio Club
YouTube Channel**

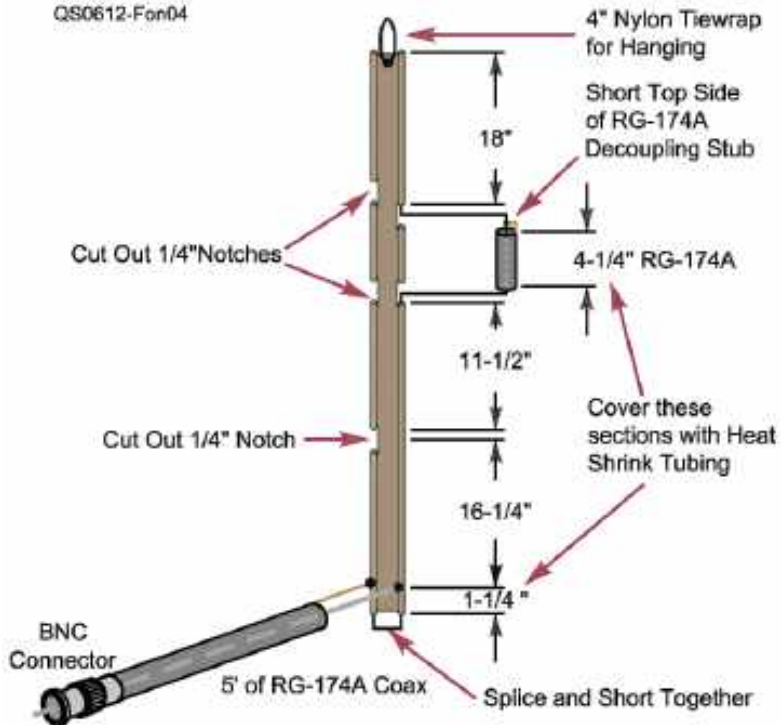
<https://www.youtube.com/@W2MMD>

Need a ride to a Club meeting, event, or activity?

Just send a message to the Club's e-mail reflector asking if a member can pick you up

[GCARC <at> MAILMAN <dot> QTH <dot> NET](mailto:GCARC@MAILMAN.QTH.NET)

All Club members have access to this FREE e-mail service



Tech Saturday Forum

June 8, 2024 @ 0900 Hours
&
June 15, 2024 @ 0900 Hours

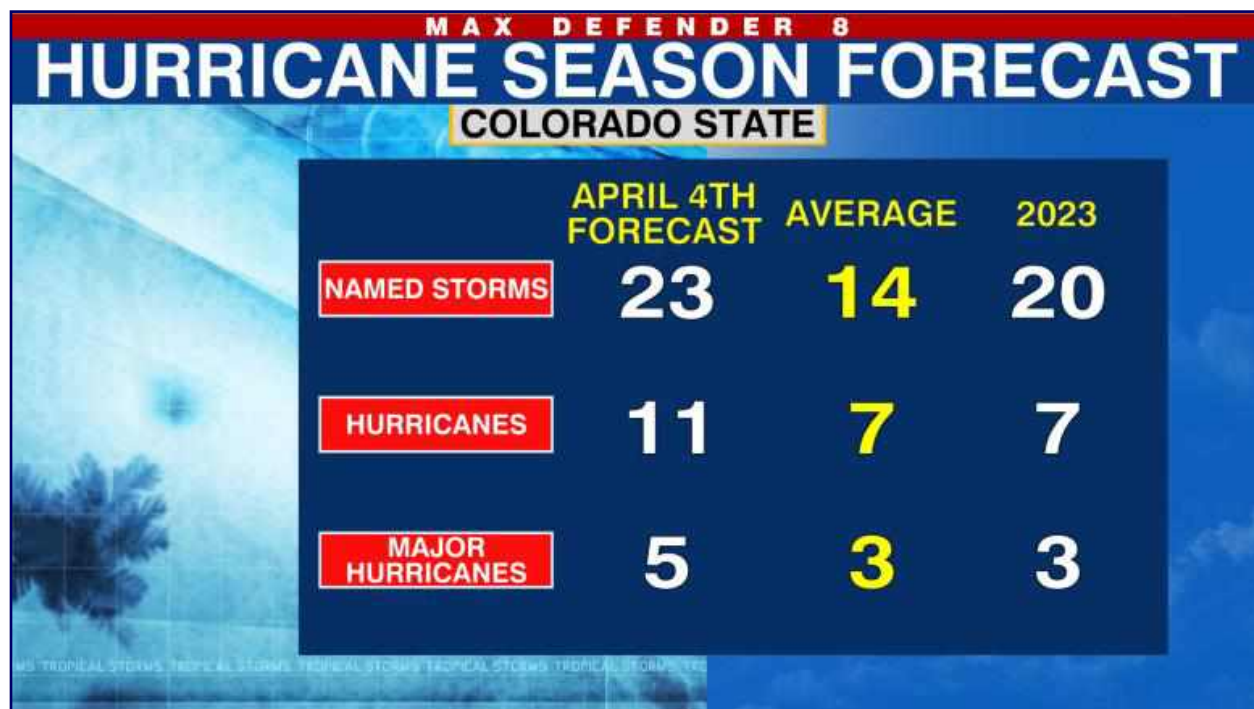
W2MMD Clubhouse

*Forum Topic : Building & Tuning
The Ed Fong WB6IQN DBJ-1 Type
of Dual-Band Antenna 2M/70cm*

*Registration for this event is required so we can have adequate supplies & equipment available. A \$15.00 fee will be charged for the parts.
Please contact Chris Prioli, AD2CS at chris@ad2cs.com.*

Q & A Session About All Things Ham Radio and Socializing!

The HF Station Will Be Available For Local Operation!





GCARC Monthly VE Exam Testing Summary - May 9, 2024

Gary Reed, N2QEE, Reports : The GCARC monthly VE session was held on May 9, 2024. There were three candidate for the session who tested for new licenses. They were :

- **Phillip Lizzi AD2HU of Deptford who took all three exams achieving Amateur Extra**
- **Alex Stevenson KE2DKC Technician of Bridgeton**
- **Kerri Caguiat KE2DKD Technician of Sicklerville**

The posting of the licenses to the URL was Tuesday May 14th. A little slower the previous VE sessions which usually have happened on Friday PM or Saturday AM.

I have heard from one candidate for next month's session so we are having continued interest in our monthly sessions.

The participating VE's were :

- **Mike N2WOQ**
- **Chris AD2CS**
- **Court KD2SPJ**
- **Earl KC2NCH**
- **Mike KG4JYA**
- **Greg W5DO**
- **Jerry K2EAB**
- **Gary N2QEE**

A big thank you to the participating VE's

The new Amateur Extra exam pool questions will be in effect starting July 1st so new exam booklets will be used. All question pools are available on the w2mmd.org website at :

<https://gloucestercountyarcc.weebly.com/get-your-ham-ticket.html>

The next monthly VE session will be held June 13, 2024 @ 1900 Hours at the W2MMD Clubhouse.



DAs and DITs

>> Get well to **Gary Reed, N2QEE**, recovering from eye surgery.

>> Congratulations to the following **Club Student Members** :

- **Holden J Correia-Fisher, KD2JPV**, who graduated from the Rowan University Ric Edelman College of Communication & Creative Arts with a degree in Radio, Television & Film (Summa Cum Laude). Holden was also awarded the Bierman Family Excellence in Media Production Medallion.
- **Beth A Kraus, KE2BPE**, who graduated from the Rowan University Henry M. Rowan College of Engineering with a degree in Electrical Engineering Technology (Summa Cum Laude).

>> Congratulations to **Marylou Ciraula, K3MLC** (ex. KE2CEF) on her new vanity callsign.

>> **Darrell Neron, AB2E, Reports**, Fascinating website that collects data on the Sun from a dozen major sources and presents it in a great format! Compiled by **VE3EN**. <https://www.solarham.com>

>> Condolences to **Bob Durham W2RAD** and family with the passing of his father.

>> Get well to **Chris Prioli AD2CS's XYL Linda** recovering from a stroke.

>> A great website for the latest **DX** news is : <https://www.dx-world.net>

>> **EchoLink** has an edition that runs entirely within a web browser. Go to : <https://webapp.echolink.org>

"Dinner @ The W2MMD Clubhouse"
Wednesday, June 26, 2024 @ 1800 Hours
W2MMD Clubhouse



Club Merchandise from the K2ZA Workshop
Contact John Zaruba Jr, K2ZA at k2za@icloud.com

Go To : <https://gloucestercountycarc.weebly.com/club-merchandise.html>



Tuesday & Thursday Nights 10M Rag Chew Net @ 1930 Hours
28.465 MHz or 28.475 MHz

W2MMD



www.facebook.com/W2MMD



twitter.com/w2mmd_gcarc

Facebook

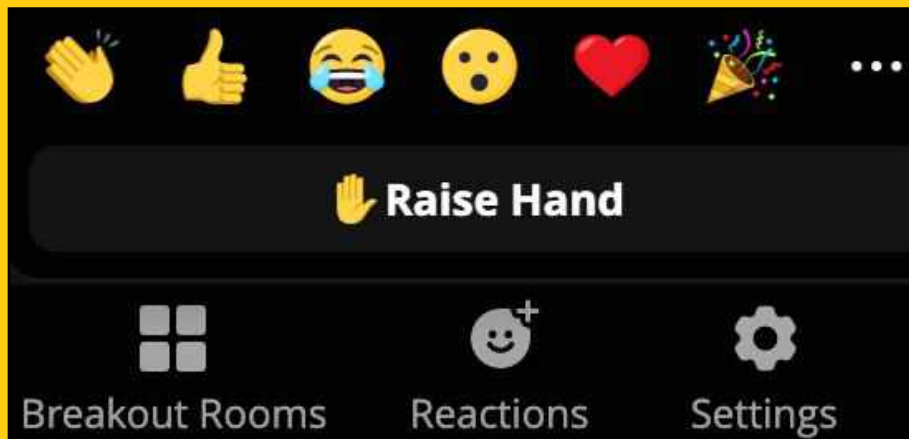


ZOOM Protocols For GCARC Meetings

To provide for a more pleasant and efficient ZOOM experience for our Club members, several protocols have been established for use at these meetings.

- All participants will be MUTED by the administrator.
- If you wish to comment, please use the ZOOM “Raise Hand” feature. (See Below)
 - In the meeting controls, click “Reactions”, then click “Raise Hand”.
 - Users can also raise or lower their hand with the Alt+Y (Windows) or Option+Y (macOS) keyboard shortcuts.
- The administrator will then un-mute you so you can join the conversation. You will not be able to un-mute yourself.
- If you are going to use your camera, please be attired as you would be if physically coming to the meeting. Otherwise, please turn off your video.

Thanks for following these points to help our meetings run smoothly.



ADIF Logs Wanted When Operating As W2MMD @ The Clubhouse

By Jim Wright, N2GXJ - jim.n2gxj@gmail.com

It is a common courtesy in ham radio to be able to QSL 2-way contacts made with other hams. We're pretty good about doing this for our field day contacts made each year, but are falling behind in this for contacts we make from the Clubhouse as W2MMD.

So here is the ask :

If you operate from the Clubhouse as W2MMD (e.g. on HF, UHF/VHF, or on Satellite, at Tech Saturday, or during contests or other), please email me the electronic log entries in ADIF format from the logger program you used for those contacts?

That way, just like I do following field day each year, I can get them uploaded to LOTW and to eQSL to offer the courtesy of an electronic QSL to those who make contact with us as W2MMD here in NJ.

Thank you

Regional (Atlantic & Hudson Divisions) Hamfests & Events

June 1, 2024 : Ocean-Monmouth Amateur Radio Club, OMARC Spring Hamfest, Spring Lake Heights Volunteer Fire Company No. 1, 700 Sixth Avenue, Spring Lake Heights, NJ. www.n2mo.org

June 2, 2024 : East Greenbush Amateur Radio Association, 2024 EGARA Hamfest, East Greenbush Volunteer Fire Department Pavilion, 68 Phillips Road, Rensselaer, NY. www.egara.org

June 2, 2024 : Long Island Mobile Amateur Radio Club, Long Island Hamfest & Electronics Fair, 999 Stewart Avenue, Bethpage, NY. www.limarc.org

June 8, 2024 : Skyline Amateur Radio Club, Cortland Hamfest & Technology Fair, Cortland County Fairgrounds, 4301 Fairgrounds Drive, Cortland, NY. www.skylinehamradioclub.org

June 8, 2024 : Lockport Amateur Radio Association, 3rd Annual Summer Outside HamFest, Cambria Volunteer Fire Hall, 4631 Cambria-Wilson Road, Lockport, NY. www.lockportara.us

June 9, 2024 : BreezeShooters Amateur Radio Club, BreezeShooters Hamfest, ARRL Western Pennsylvania Section Convention, Butler Farm Show Grounds, 625 Evans City Road, Butler, PA. www.breezeshooters.org

June 15, 2024 : Columbia-Montour Amateur Radio Club, Bloomsburg Hamfest. Lime Ridge Community Center, 6405 4th Street, Lime Ridge, PA. www.cmarc.club

June 16, 2024 : Baltimore Amateur Radio Club, BARC Father's Day Hamfest & Swapmeet, Arcadia Volunteer Fire Company Grounds, 16020 Carnival Avenue, Upperco, MD. www.w3ft.com

75th ANNIVERSARY
Unión de Radioaficionados Españoles
75 Años Creando afición 1949-2024

15 SLOTS HF
N2GXJ
JAMES C WRIGHT

In recognition of having succeeded in establishing the necessary contacts with the special stations, this award is given in the Bronze category

#6565 | 2024-04-20

No. 10,802 WORLD	No. 742 N.AMERICA	No. 584 UNITED STATES
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Pedro Fernández
IAHF - President

Joaquín Robles
IAHF - Secretary

The GCARC's Ballooning Adventure Begins On Saturday, June 1, 2024!

By Jon Pearce, WB2MNF

See Editor's Note on Page 15

As if our Club didn't already have a full plate of activities, we'll be launching a balloon on June 1st that we hope will circumnavigate the earth sending back WSPR messages on 20 meters! Here's how that will work.

Several months ago the Club was contacted by Club member **Joseph Lee N2BNJ**, who's also a school board member of the Upper Deerfield Township Schools. Joe was asking if the Club would be interested in developing a STEM program possibly featuring Amateur Radio for students in the Woodruff Middle School. Since supporting Amateur Radio education is an important goal of every group, we immediately jumped on board and started discussions as to the type of activities that might be interesting to students at that level. After evaluating several options, launching and following a circumnavigating balloon carrying an Amateur Radio transmitter was determined to be the best option. This will demonstrate ham radio and provide a multitude of educational opportunities for kids in many related scientific areas.

These activities will begin in the fall, but it was obvious to our team that our first balloon launch couldn't be the large public event that would occur with the school, and that we had to assure ourselves that we had the skills and materials needed to create a successful launch. So a group of Club members started researching websites, watching videos, and slowly building a knowledge base on balloon launching, focusing on learning the best practices of other groups who have had successful ballooning activities.



Figure 1 : SBS-13 Balloon

The Balloon

After evaluating a number of products we selected the **SBS-13 balloon (Figure 1)** made by **Scientific Balloon Solutions** (<https://www.scientificballoonsolutions.com>). This balloon is used by several successful groups and appears to be the current choice of successful Amateur Radio balloonists. The balloon gets partially filled with hydrogen or helium (we're using hydrogen because of its lower cost and greater lift characteristics) until the lift generated by the balloon is approximately 7 grams greater than the weight of the payload. This is measured by attaching the balloon to a weight on a gram scale and slowly inflating the balloon until it lifts the weight by the necessary amount. The bottom of the balloon is then heat sealed, connected to the payload, and launched.

The Payload

The payload of circumnavigating balloons includes a transmitter, solar cells, and one or more antennas. Virtually all circumnavigating balloons utilize the WSPR protocol on HF frequencies because of its ability to be decoded at low signal levels over long distances. In addition, some groups have also included an APRS transmitter for greater location definition over populated areas, but we chose not to do this on our first launch because of the significantly increased cost of those units.

The **transmitter (Figures 2 & 3)** that we selected is made by **ZachTek** (<https://www.zachtek.com>) and comes as a mostly assembled PC board with two super capacitors that need to be soldered onto the circuit board. It's programmed through a serial connection which is then removed before flight. Power is obtained from 2 solar cells mounted at angles on the board to create maximum illumination from sunlight.

GCARC Ballooning Adventure - Continued on page 14

The whole device is tiny and virtually weightless - the transmitter itself weighs less than 9 grams and the solar cells weigh about the equivalent of a sheet of paper. **Mike Thompson KG4JYA** assembled and programmed both of these, and we'll hang them outside of the Clubhouse for testing until the launch date.

The payload is hung from the balloon from a 17 foot length of fishing line and also a 17 foot length of enameled #36 wire that forms the top half of a vertical 20m dipole. Below the transmitter is another 17 foot length of wire completing the lower half of the dipole. **Figure 4** shows this configuration for one of **W5KUB's** launches although we're not using the APRS transmitter that he is including.

Although the transmitter only runs about 20 milliwatts it can still be heard at great distances. Mike set it up at a location in Michigan and was received as far away as Florida, and with the balloons riding at about 45,000 feet the coverage area should be significantly better. Some balloonists have been reporting that they were able to follow their balloons on the radio virtually in real time.

Tracking (Reference Figures 5, 6, 7, and 8)

There are several methods of tracking the satellite, some involving actual radio reception while others utilize the worldwide WSPR receiving network with some supplemental work done to get the data onto various websites. Direct reception of WSPR signals is done using the standard WSJT program in WSPR mode (**Figure 5**), and listening on 14.095.600 MHz, the standard WSPR frequency. WSPR transmissions are two minutes in length, but an additional 2 minutes is needed to send the last two digits of the six digit grid square, so it takes 4 minutes to gather all of the information from one transmission. Hams with decent 20m receiving antennas may be able to track this balloon themselves.

For those without radios and to access the worldwide WSPR receiving network at the <https://www.wsprnet.org/drupal/wsprnet/spots> website receives and tracks WSPR reception (**Figure 7**) throughout the world. It displays it in tabular and map formats and also allows database queries. **Figure 6** shows Mike testing the transmitter connected to a dummy load while receiving at the Clubhouse HF station.

Finally, the <https://sondehub.org> website (**Figure 8**) is specifically designed for balloon tracking, displaying only WSPR signals from balloons.

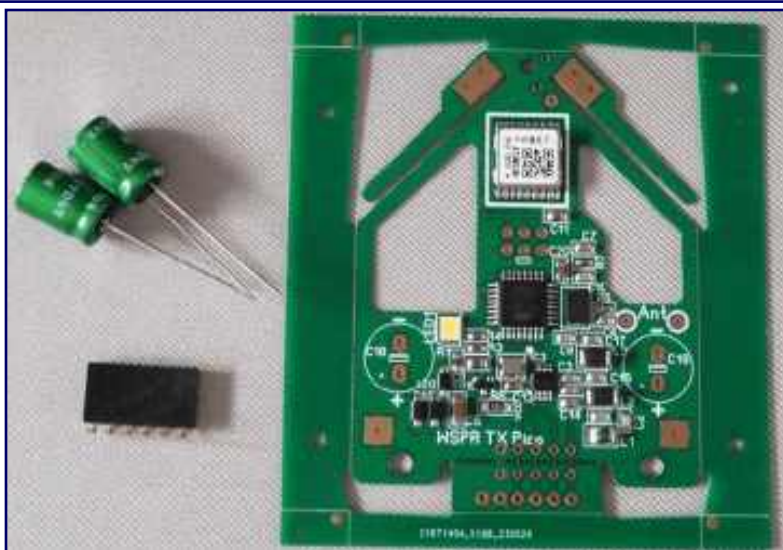


Figure 2 : ZachTek Transmitter Kit

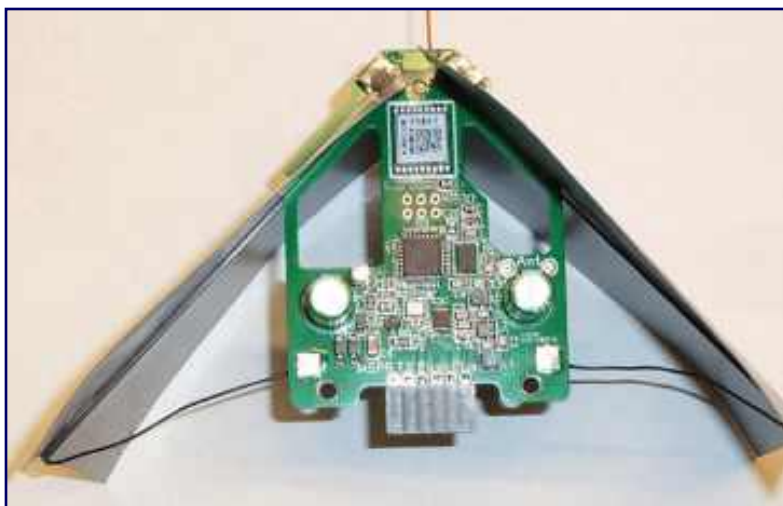


Figure 3 : ZachTek Transmitter With Solar Cells Attached

Next Steps

At the time of this writing we have all of the components assembled other than the lifting gas, which is still in process. We have materials for two complete balloons and will be launching them individually with the second's schedule predicated on the success of the first. Weather conditions for a launch must be dry with winds less than 10 mph.

If everything works out we'll attempt to launch on Saturday, June 1, 2024 around noontime.

Editor's Note : *"The balloon team had targeted this Saturday June 1st to launch the WSPR balloon but we're still in the process of sourcing the hydrogen lift gas and it's unlikely that we'll have everything together by Saturday. We'll announce when we're ready to launch it - hopefully by June 8th."*

73 de Jon WB2MNF - May 28, 2024

Figure 4 : W5KUB's Balloon

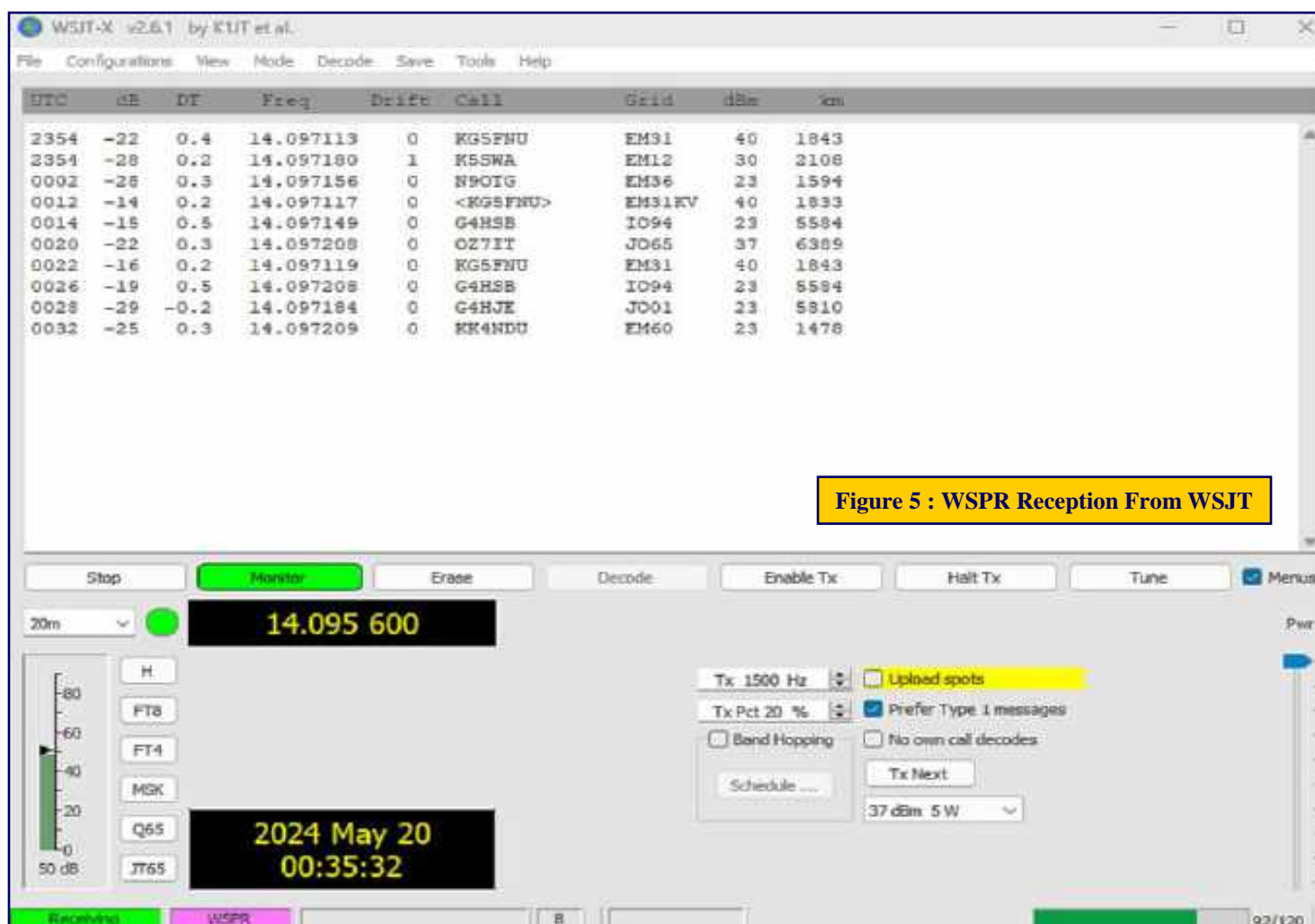
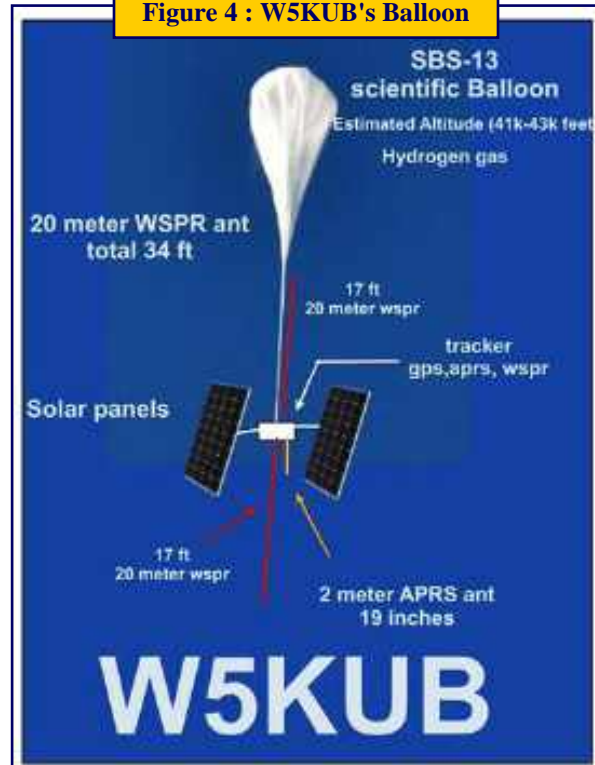


Figure 5 : WSPR Reception From WSJT

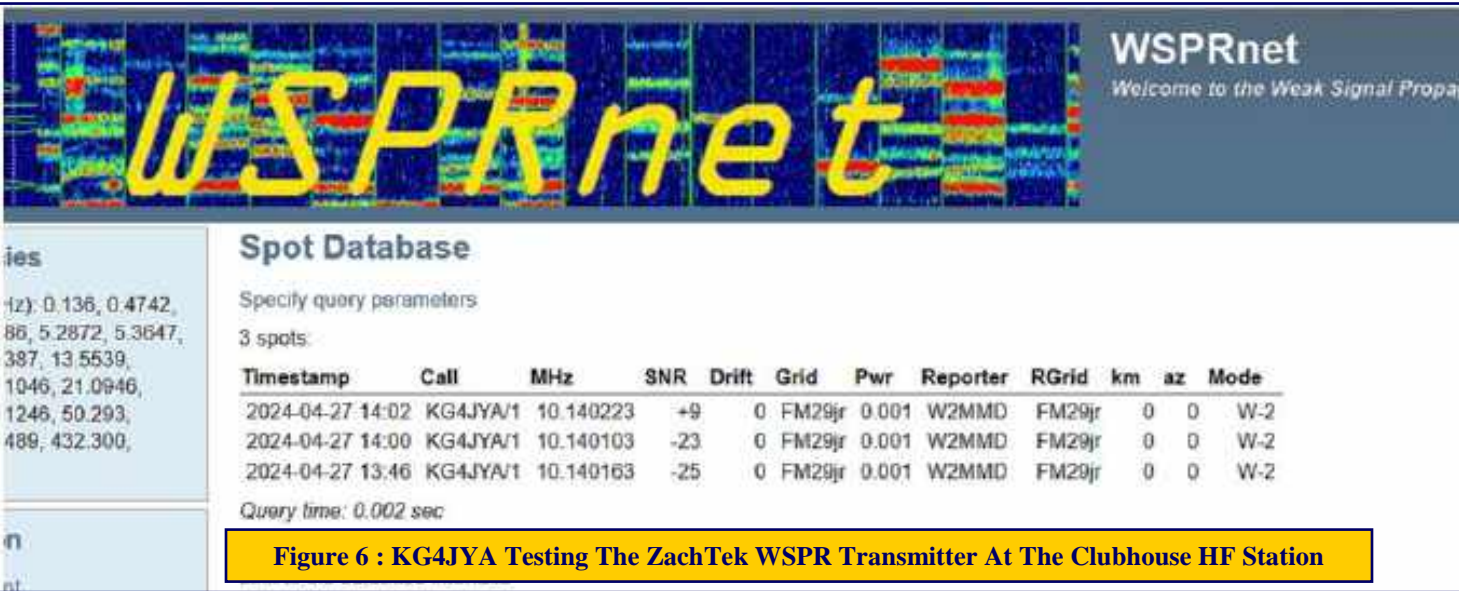


Figure 6 : KG4JYA Testing The ZachTek WSPR Transmitter At The Clubhouse HF Station

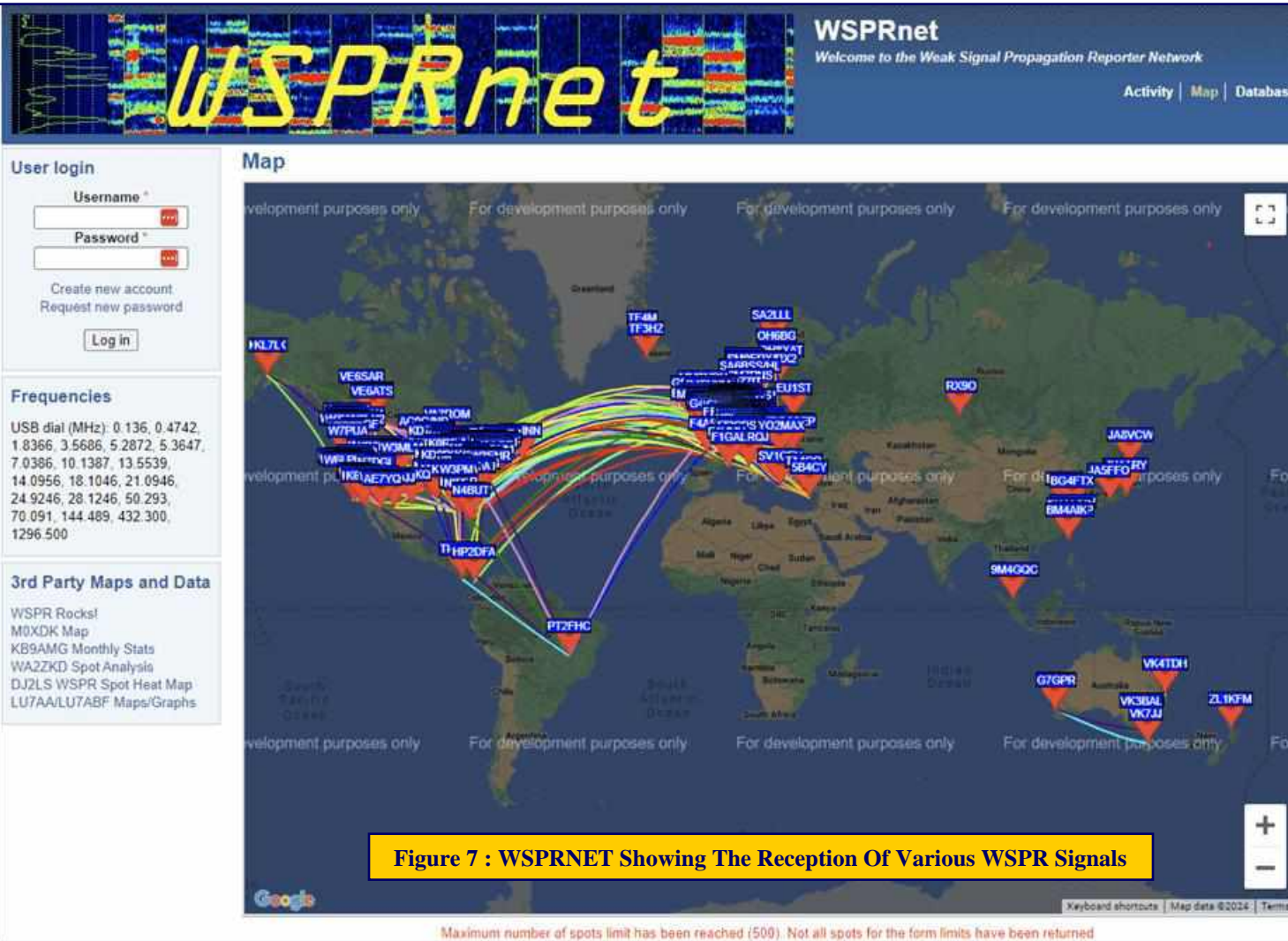


Figure 7 : WSPRNET Showing The Reception Of Various WSPR Signals



Figure 8 : Sondehub.org Website Showing The Locations Of Balloons

Remembering D-Day



June 6th, 1944



The Education Connection

By Chris Prioli, AD2CS - chris@ad2cs.com
www.ad2cs.com



June 2024

So... at this point, as I write this column, the GCARC Ham Exam Preparation Classes Session VII meetings are more than halfway behind us. There are four more instructional meetings, followed by the last meeting at which the FCC exams will be proctored. This schedule has the Element 2 group testing on Monday 24 June while the Element 3 group is scheduled for a Tuesday 25 June test date. These should both be great VE sessions, when they occur, due to the numbers of exam candidates scheduled to sit for the exams.

It is kind of funny what can happen when your mind decides not to cooperate and go along with the scheduled program. For example, on two recent occasions in the Element 3 (General) class, I found myself at a complete loss for the words to explain a couple of pretty basic concepts. I just could not make my thoughts come together with cogent explanations for the class. I felt terrible about it, because my job as instructor in these classes is to *help* the students, *not* to confuse them.

How does one remedy such a situation? In my case, I set about documenting the explanation that I previously could not think of for each of these topics. Then, when the class next met, I started out as I always do, asking if there were any questions that had come up in the interim. Then I presented the two explanations in a clear and concise manner. It did not hurt the cause any that I had made up a slide for each topic with the explanation presented in a factual and easily-understood manner.

The disturbing part is that I have now taught this material during six prior sessions, so why was I drawing a blank this time? That is the nature of memory and cognition, and until they computerize the human mind, it will not change. That is the reason that so many training programs utilize gross repetition as a means of establishing a concept, rule, or procedure as a rote memory item that will surface without forethought. I believe that such repetition is an excellent means of memorizing the things which we, as hams, continually have problems.

For example, radio amateurs at all license levels will often have difficulty with remembering the band limits for specific bands, or maybe the channel frequency assignments for the five channels of the 60-meter band. These important frequencies can be drilled into our brains to become rote tidbits of data through deliberate and prolonged repetition. An easy way to accomplish this is to make up some "flash cards" on 3" x 5" index cards, which are widely available at office supply centers. Make topic-specific flash cards for any data with which you are having difficulty as regards memory. This system will work well for almost any area of information that you want to commit to permanence in your "memory banks" for immediate retrieval without the need to think about it. Online flashcards are available at ham training websites such as hamexam.org, which I use extensively for practice tests in the classroom as well.

That's all for this edition... see you next month.



Tuesday Afternoon Net @ 1200 Hours



Net Control Stations :

Steve Farney, W2SEF; Chris Prioli, AD2CS; Greg Ciraula, W5DO;
Rich Subers, W2RHS, & Jeff Garth, WB2ZBN

147.180 MHz (+) (131.8) Repeater & EchoLink W2MMD-R

Here is the schedule for the upcoming weeks

Greg Ciraula, W5DO : June 4, 2024
Chris Prioli, AD2CS : June 11, 2024
Steve Farney, W2SEF : June 18, 2024
Steve Farney, W2SEF : June 25, 2024

Greg Ciraula, W5DO : July 2, 2024
Chris Prioli, AD2CS : July 9, 2024
Steve Farney, W2SEF : July 16, 2024
Steve Farney, W2SEF : July 23, 2024
Jeff Garth, WB2ZBN : July 30, 2024

If you would like to be a Net Control Station for this net, please contact Steve Farney, W2SEF



Thursday Night Rag Chew Net @ 2000 Hours



Net Control Stations :

Chris Prioli, AD2CS; Mary Delemarre, W2TDS; Gary Mirkin,
WA3SVW; Steve Farney, W2SEF; Greg Ciraula, W5DO; & Jeff
Garth, WB2ZBN

147.180 MHz (+) (131.8) Repeater & EchoLink W2MMD-R

Here is the schedule for the upcoming weeks

Chris Prioli, AD2CS : June 6, 2024
Mary Delemarre, W2TDS : June 13, 2024
Gary Mirkin, WA3SVW : June 20, 2024
Steve Farney, W2SEF : June 27, 2024

Happy Independence Day : July 4, 2024
Mary Delemarre, W2TDS : July 11, 2024
Gary Mirkin, WA3SVW : July 18, 2024
Steve Farney, W2SEF : July 25, 2024

If you would like to be a Net Control Station for this net, please contact Jeff Garth, WB2ZBN

So you find our website confusing, can't find anything, Well So Do I!!

I have created a page (*What, Not Another Page!!*) called "Quick Links"

On this page you will find "Buttons" to some the most popular pages
I will add more as time goes on, but I hope this helps your journey navigating
through your Club Website!

<https://gloucestercountync.weebly.com/quick-links.html>



Gloucester County Skywarn Net

The Gloucester County Skywarn Net is held every Sunday @ 1930 Hours on the 147.180 MHz (+) (131.8) Repeater & EchoLink W2MMD-R

All Are Welcome To Participate

Net Control Stations : Steve Bromhead KB2RTZ, Greg Ciraula W5DO, Bob Keogh KD2NEC, Charlie Wahl, KC2STO, & Jeff Garth WB2ZBN



Gloucester County ARES Net

The Gloucester County ARES Net is held every Sunday @ 2000 Hours on the 147.180 MHz (+) (131.8) Repeater & EchoLink W2MMD-R

All are welcome to participate

Net Control Stations : Steve Farney W2SEF, Greg Ciraula W5DO, Bob Keogh KD2NEC, Karl Frank W2KBF, Al Arrison KB2AYU, Gary Mirkin WA3SVW, Todd Woodward KD2ESH, & Jim Wright N2GXJ

Al Arrison KB2AYU : June 2, 2024

Greg Ciraula W5DO : June 9, 2024

Steve Farney, W2SEF : June 16, 2024

Karl Frank W2KBF : June 23, 2024

Bob Keogh KD2NEC : June 30, 2024

*“Ask not what your Club can do for you,
Ask what you can do for your Club”
- KA2OSV*



ARRL Learning Center

<https://learn.arrl.org>

Discover how to make Amateur Radio your own.

Online courses from the ARRL Learning Center provide ARRL members with additional instruction and training for getting on the air, emergency communications, and electronics and technology.

Current Website Updates : Go to this page to find out the latest changes & updates on our W2MMD Website

<https://gloucestercountyarcs.weebly.com/current-website-updates.html>



At The Repair Bench...

A monthly column describing a recent repair bench event.

By Chris Prioli, AD2CS - chris@ad2cs.com - www.ad2cs.com

Icom IC-756 PRO – June 2024

One of my fellow GCARC members called me one day because he was having some difficulties with his **Icom IC-756 PRO (Figure 1)**, particularly in tuning the set via the VFO. While I helped him to determine that his biggest problem was the fact that the VFO was locked, I could not account for all of the behavior of the radio. He asked me to put it on the bench and give it a good once-over.



Figure 1 : Icom IC-756 PRO

I found that *almost* everything was normal with the set, with one glaring exception. The VFO worked very intermittently. If the dial was turned very slowly, it would tune, but it would skip for one half of the revolution of the VFO knob. If the knob was spun rapidly, it would not tune at all.

A quick look at the IC-756 PRO schematic showed that the VFO utilizes a magnetic encoder as its control device. Removal of the front panel, and partial disassembly of that panel, was necessary to access the encoder in its installed location. I quickly determined that the encoder has suffered some sort of a mechanical failure in that a black powdery substance was coming out of the encoder body along the encoder shaft. I attempted a cleaning of the encoder, but to no avail. The encoder still behaved badly, so I determined that a replacement encoder was required.

The **encoder (Figure 2)** has a part number on it (RMS20-250-201P), which turned out to be a Nidec magnetic encoder having 250 pulses per revolution and designed for operation on 5VDC, with “A” and “B” square wave outputs in quadrature. I ordered in a replacement encoder from one of my standard suppliers, knowing that the received encoder would not have the four-pin plug on it, being terminated as wire leads instead. It took only a couple of days to receive that encoder, but when it came in, I discovered that the encoder used by Icom in this case, while carrying that part number, was in fact a custom variation of that part, having a shaft that is approximately 15mm longer than the shaft on the standard part. Obviously, this encoder was not going to fit properly in the radio, in that the shaft would not extend far enough through the front panel for the knob to mount on it properly.



Figure 2 : Icom IC-756 PRO Encoder

I ended up locating another encoder, this one having the correct length shaft and the pre-installed four-pin plug. It carried an Icom part number of 6910011090. I was fortunate in being able to obtain this part at a price somewhat reduced from the normal Icom asking price for the part, which was quite expensive.

When the Icom encoder came in, I installed it and tested the operation of the radio. All worked as it was intended to, and the tuning was, of course, back on track. I put the radio through its paces with the full array of test equipment connected, and all was well. The radio was ready to go back to its owner.

At The Repair Bench - Continued on page 22

The lesson learned in this repair is that even when a part carries a part number that matches up with a manufacturer's standard parts offerings, it may still be a customized and therefore a proprietary part. This makes sourcing a replacement part somewhat more difficult, and can severely limit the cost-savings effect of purchasing a standard off-the-shelf part for a repair.

As a final point, I had done some research into **Icom IC-756-series encoder (Figure 3)** issues and I found that this is a quite common failure, in most cases with the encoder going out of alignment or failing due to the failure of one or both halves of the dual comparator IC that is integrated into the encoder assembly. There is information on the web about repairing these encoders from a realignment standpoint and also from a replacement of the IC standpoint. It turns out that an ubiquitous LM393 dual comparator IC in its SMT form factor will do the job nicely.

The reason that I opted for replacement of the encoder is two-fold : (1) while the price of the LM393 comparator is minute, the time that it takes to disassemble the encoder and replace the IC would cost the owner more than the cost of the replacement encoder, and (2) the fact that the black powdery substance was coming out of the encoder tells me that there was physical damage internal to the encoder as well as whatever electronic damage existed.



Figure 3 : Icom IC-756 Encoder Fully Disassembled

Had the radio been my own radio, I may have experimented with repairing the encoder. With the radio belonging to a customer, I chose to err on the side of caution, as I would have to stand behind my work. Oh yeah - one other thing. There is also a case documented online about a ham who used one of the standard encoders in an Icom IC-756 and extended the shaft length via the use of a coupling collar and a cut-off shaft from a potentiometer. It turns out that as an idea, that is not half bad. The problem is that there is not much room for any kind of standard 1/4" coupler to fit in there, so instead, I have discussed having custom single-piece extenders turned from aluminum rods. I have provided a fellow GCARC member with a drawing of what I would like the extender to look like, and as of this writing, he has made a small quantity of these shaft extenders for my use. I have also had a few shaft extenders manufactured for me via the 3-D print process. As it turns out, I have now installed both types of shaft extenders. When the metallic type is installed, I have found it advantageous to also install a copper leaf spring contact that maintains a positive connection to the knob and shaft, and which is connected to the radio chassis. This provides an effective ground path for the static electricity that may find its way onto the shaft from the operator's touch.

It also turns out that Icom uses the same encoder with the standard (shorter) shaft in other radio models, including the IC-718, where it seems to see frequent failures, presumably due to static discharge through the encoder knob and circuit to ground. I will hang onto the standard encoder, as it will probably find a use at some point in the future.

See you next month!

Club Member	DMR ID
W2MMD Clubhouse	3198604
Michael Andrescavage, N2ICV	3134044
Lance Appel, KE2UC	3200487
Alex Calabrese, WA2ADS	3100583
Chuck Capasso, WB2PGE	3169781
Matthew Carango, N3QB	3169432
Todd Cecilio, KA2YNT	3169458
Anthony Cerami, N2OAC	3202759
Mark Clark, N3QMJ	3102110
Holden Correia-Fisher, KD2JPV	3104911
Mike Covaleski, N2MMC	3134855
Walter Coward, WX2E	3166863
Bob Demola, KD2GFL	3134319
Doug Dersch, KD2VQA	3193630
Thomas Distelcamp Sr, KC2GYC	3110869
Glenn Dougherty, N2YIO	3161836
Adam Duncan, W3DUN	3202691
Herb Dyer, KT2Y	3134907
Harry Elwell, AD5TT	3128498
James Foster, W3JNF	3142117

Club Member	DMR ID
Karl Frank, W2KBF	3146716
Glen Guenther, KE2BUO	3202079
Melissa Guenther, KE2BWZ	3202496
Gary Mirkin, WA3SVW	3165494
John Murrow, KD2NHH	1134122
Phil Nunzio, WA3RGY	3134336
John O'Connell, K2QA	3110610
Robert Pantazes, W2ARP	3157208
Jon Pearce, WB2MNF	3163415
Mike Pecorini, K2MRP	3132996
Michael Pentimall, KC3VTF	3203601
John Price III, KD2QYC	3123583
Chris Prioli, AD2CS	3195449
Len Rust III, W2LJR	3186225
Len Rust IV, K2LJR	3196243
Dave Sheppard, W2PAX	3112666
Cory Sickles, WA3UVV	1142052
James Simeone, KC2AOF	3134848
Court Smith, KD2SPJ	3186243
Rich Subers, W2RHS	3204316
Brett Waller, K2BKW (KC2UXQ)	3134261
Bill Wood, KD2OSJ	3197459
John Zaruba Jr, K2ZA	3134331

For more information, DMR links, and W2LJR's DMR presentations, go to :
<https://gloucestercountvarc.weebly.com/dmr.html>

CrossTalk Submissions

This is your Club Magazine. Make use of it.

If you have stories or photos of your hobby that you would like to share with the Club, please do so!

We will keep covering all of the GCARC events, but it is also nice to get those personal perspectives to include in every issue. Connecting through experiences is what makes the Gloucester County Amateur Radio Club a *REAL* Club.

All submissions, queries, comments, and editorials should be addressed to :
 Jeff Garth, WB2ZBN at djgrath1 <at> gmail <dot> com

Submission deadline for the July 2024 issue : Thursday, June 20, 2024

Club Website www.w2mmd.org

Club E-Mail Reflector: GCARC <at> Mailman <dot> QTH <dot> net

DMR Configuration Sequence

1. Obtain and Configure DMR ID :

- <https://www.radioid.net>

2. Download Contact List :

- <http://www.dmrcontacts.com>

3. Identify Repeater or Hotspot :

- <https://www.repeaterbook.com>

4. Define Talk Groups

- Numerical ID
- Text Name

<https://brandmeister.network/?page=talkgroups>

5. Create Channel

- Select Number
- Assign Name
- Select DMR ID
- Assign Frequency
 - ♦ Transmit
 - ♦ Receive
 - ♦ Bandwidth
 - ♦ Power
 - ♦ DMR Mode (Simplex/Repeater)
 - ♦ TX Permit (Channel Free)

- Assign Talk Group
- Assign Color Code
 - ♦ Agreed Upon with Other Users
- Assign Time Slot
- Agreed Upon with Other Users

6. Create Zone

7. Add Channels to Zones

8. Configure Features

9. Upload Code Plug

10. Upload Contact List

ARES Resources

Download the ARES Manual [PDF] : <https://bit.ly/3iUhJLQ>

ARES Field Resources Manual [PDF] : <https://bit.ly/3QT4PtY>

ARES Standardized Training Plan Task Book [Fillable PDF] : <https://bit.ly/3wg5kVt>

ARES Standardized Training Plan Task Book [Word] : <https://bit.ly/3ZTNDbR>

ARES Plan : <https://bit.ly/3XLokXH>

ARES Group Registration : <http://bit.ly/3XodGpX>

Emergency Communications Training : <http://bit.ly/3J2gMMf>

2022 National Preparedness Report : <https://bit.ly/3EnvcTW>

Southern New Jersey Section EOP 2022.PDF : <https://bit.ly/3SbrXol>

The Amateur Radio Emergency Service® (ARES) consists of licensed amateurs who have voluntarily registered their qualifications and equipment, with their local ARES leadership, for communications duty in the public service when disaster strikes. Every licensed amateur, regardless of membership in ARRL or any other local or national organization is eligible to apply for membership in ARES. Training may be required or desired to participate fully in ARES. Please inquire at the local level for specific information. Because ARES is an amateur radio program, only licensed radio amateurs are eligible for membership. The possession of emergency-powered equipment is desirable but is not a requirement for membership.

If you are interested in learning more about the Gloucester County ARES Program or becoming an ARES member, please contact Bob Keogh (KD2NEC@QSL.NET)

Announced DX Operations

www.ng3k.com/Misc/adxo.html

From The Shack of Bill Feidt, NG3K : www.ng3k.com

2024 May22	2024 Jun03	Br Virgin Is	VP2V	LoTW	TDDX 20240313	By W5GI as VP2V/W5GI fm Anegada I; 20-10m; SSB
2024 May22	2024 Jun05	Ogasawara	JD1BQW	LoTW	DXW.Net 20240426	By JA6VZB fm Chichijima I; focus on 12 6m; FT8; QRV for CQ WPX CW and ARRL Digial; QSL via Club Log OQRS or JA6VZB Buro
2024 May23	2024 May27	Bermuda	VP9	See Info	AB2E 20240418	By AB2E as AB2E/VP9; low bands; CW FT8; QSL via LoTW; QRV for WPX CW using VP9I (QSL via WW3S
2024 May24	2024 May26	Aland Is	OH0	Club Log OQRS	TDDX 20240508	By DK1VK as OH0/DK1VK; 40 20 17 15 10m; SSB; QSL via DK1VK Buro
2024 May24	2024 Jun19	Glorioso Is	FT4GL	LoTW	DXW.Net 20240315	By FH4VVK fm Grande Glorioso I (IOTA AF-011); HF; QSL via F4FTV
2024 May25	2024 May29	Monaco	3A	LB3LJ Direct	DXW.Net 20240507	By LB3LJ as 3A/LB3LJ; HF
2024 May26	2024 May30	Crete	SV9	LoTW	DXW.Net 20240508	By PP2GTA as SV9/PP2GTA fm IOTA EU-015; HF; FT8 SSB
2024 May28	2024 Jun13	St Kitts & Nevis	V47JA	LoTW	W5JON 20240124	By W5JON fm Calypso Bay, St. Kitts; 160-6m; SSB FT8; yagi, verticals; QSL also OK via W5JON direct
2024 May30	2024 Jun10	Pitcairn	VP6DF	LoTW	DXW.Net 20240422	By WJ2O fm IOTA OC-063; 160-10m; CW; QSL via N2ZN
2024 May30	2024 Jun20	Crete	SV9	DK5EW Direct	TDDX 20240419	By DK5EW as SV9/DK5EW; 6 4m
June						
2024 Jun01	2024 Jun15	Mozambique	C91AHV	LoTW	DXW.Net 20240403	By CT7AHV; 40 20 15 10 6m; SSB CW FT8; QSL via EA5GL
2024 Jun05	2024 Jun19	St Martin	FS	LoTW	DXW.Net 20240413	By K9EL as FS/K9EL; 6m + HF; holiday style operation; QSL via Club Log OQRS (preferred) or K9EL
2024 Jun14	2024 Jun24	Lord Howe I	VK9LA <small>NEW</small>	LoTW	DXW.Net 20240515	By 160-10m; CW SSB FT8; QSL vi YL2GN
2024 Jun16	2024 Jun29	Maldives	8Q7JF	LoTW	DXW.Net 20240227	By DL6JF fm Helengeli Atoll; HF; CW + digital; holiday style operation; QSL via DM5JBN
2024 Jun18	2024 Jun30	Tanzania	5H3DX	LoTW	DXW.Net 20240507	By NK8O; HF; CW FT4 FT8; 100w; spare time operation
2024 Jun23	2024 Jul05	Turks & Caymans	VP5 <small>NEW</small>	LoTW	DXW.Net 20240514	By AA5UK fm Pridenciales (FL31uu) as VP5/AA5UK 40-6m; FT8 RTTY Olivia, SSB
2024 Jun26	2024 Jul09	Americal Samoa	K8K <small>NEW</small>	LoTW	TDDX 20240515	By 160-10m; CW SSB FT8; QSL vi YL2GN

Also for your convenience, there is a direct link to NG3K on our website. Click on the NG3K DX Page.

Be A Club Volunteer!

Club Technical Volunteer Projects :

- Processing monthly membership meeting and Tech Saturday videos for the YouTube channel
- Assisting the AV team at the Wednesday Night General Membership Meetings
- Assisting in the inventory of Clubhouse assets and keeping that inventory current
- For the more technically inclined, managing the SatNOGS station, reviewing observations, and adding new satellites to the list of those being tracked
- Reviewing new technologies for presentation at meetings or write-ups in CrossTalk.

For example, the VarAC HF digital communications program has recently been updated, it is installed on the HF station at the Clubhouse, and might provide an opportunity for an interesting short article or presentation

If you would like to volunteer for any of these projects, please contact Jon WB2MNF, Ron NR2B, or Chris AD2CS

Clubhouse Construction Volunteer Projects :

Shed : Build Ramp

Clubhouse :

- Build Ramp
- Replace Interior Front Door
- Power Wash Siding
- Replace Back Steps

Lightning Protection Project :

- Install copper strapping in Library Room
- Install copper strapping in VHF/UHF Room
- Complete grounding rod installation around Clubhouse and Towers

Install Utilities On New Front Parking Lot Pole

Install New VHF Towers

A Club that goes above and beyond for their communities and for Amateur Radio, is what defines a Special Service Club (SSC).



They are the leaders in their Amateur Radio communities who provide active training classes, publicity programs, and actively pursue technical projects and operating activities.

GCARC has been an ARRL Affiliated Club since February 1960 and an SSC since April 2010.



2020-2024 Element 4 Amateur Extra Class License Question Quiz

This month we finish up with Subelement E5 Electrical Principles (4 exam questions out of 4 groups)
(Answers on 'Last Page Calendar')

E5D01

What is the result of skin effect?

- A. As frequency increases, RF current flows in a thinner layer of the conductor, closer to the surface
- B. As frequency decreases, RF current flows in a thinner layer of the conductor, closer to the surface
- C. Thermal effects on the surface of the conductor increase the impedance
- D. Thermal effects on the surface of the conductor decrease the impedance

E5D02

Why is it important to keep lead lengths short for components used in circuits for VHF and above?

- A. To increase the thermal time constant
- B. To avoid unwanted inductive reactance
- C. To maintain component lifetime
- D. All these choices are correct

E5D03

What is microstrip?

- A. Lightweight transmission line made of common zip cord
- B. Miniature coax used for low power applications
- C. Short lengths of coax mounted on printed circuit boards to minimize time delay between microwave circuits
- D. Precision printed circuit conductors above a ground plane that provide constant impedance interconnects at microwave frequencies

E5D04

Why are short connections used at microwave frequencies?

- A. To increase neutralizing resistance
- B. To reduce phase shift along the connection
- C. To increase compensating capacitance
- D. To reduce noise figure

E5D05

What is the power factor of an RL circuit having a 30-degree phase angle between the voltage and the current?

- A. 1.73
- B. 0.5
- C. 0.866
- D. 0.577

E5D06

In what direction is the magnetic field oriented about a conductor in relation to the direction of electron flow?

- A. In the same direction as the current
- B. In a direction opposite to the current
- C. In all directions; omni-directional
- D. In a circle around the conductor

Element 4 Amateur Extra Class Quiz - Continued on page 28

E5D07

How many watts are consumed in a circuit having a power factor of 0.71 if the apparent power is 500VA?

- A. 704 W
- B. 355 W
- C. 252 W
- D. 1.42 mW

E5D08

How many watts are consumed in a circuit having a power factor of 0.6 if the input is 200VAC at 5 amperes?

- A. 200 watts
- B. 1000 watts
- C. 1600 watts
- D. 600 watts

E5D09

What happens to reactive power in an AC circuit that has both ideal inductors and ideal capacitors?

- A. It is dissipated as heat in the circuit
- B. It is repeatedly exchanged between the associated magnetic and electric fields, but is not dissipated
- C. It is dissipated as kinetic energy in the circuit
- D. It is dissipated in the formation of inductive and capacitive fields

E5D10

How can the true power be determined in an AC circuit where the voltage and current are out of phase?

- A. By multiplying the apparent power by the power factor
- B. By dividing the reactive power by the power factor
- C. By dividing the apparent power by the power factor
- D. By multiplying the reactive power by the power factor

E5D11

What is the power factor of an RL circuit having a 60-degree phase angle between the voltage and the current?

- A. 1.414
- B. 0.866
- C. 0.5
- D. 1.73

E5D12

How many watts are consumed in a circuit having a power factor of 0.2 if the input is 100 VAC at 4 amperes?

- A. 400 watts
- B. 80 watts
- C. 2000 watts
- D. 50 watts

E5D13

How many watts are consumed in a circuit consisting of a 100-ohm resistor in series with a 100-ohm inductive reactance drawing 1 ampere?

- A. 70.7 watts
- B. 100 watts
- C. 141.4 watts
- D. 200 watts

E5D14

What is reactive power?

- A. Wattless, nonproductive power
- B. Power consumed in wire resistance in an inductor
- C. Power lost because of capacitor leakage
- D. Power consumed in circuit Q

E5D15

What is the power factor of an RL circuit having a 45-degree phase angle between the voltage and the current?

- A. 0.866
- B. 1.0
- C. 0.5
- D. 0.707

Gloucester County Amateur Radio Club Elmers

We are still looking for some more Club Elmers. If you would to add your name to the Elmer's List, send your specialty to w2mmdgcarc@gmail.com. Here is what we have so far :

- **Tony Starr, K3TS : Antenna Construction; Contesting; CW Help and Training**
- **Ken Bozarth, KN2U : Antennas**
- **Jeff Welsh, KD2AZI : Boat Anchor Repair & Operation; Raspberry Pi; Arduino; Python; POTA; Mobile Installation & Operating**
- **Karl Frank, W2KBF : Digital Messaging (FLDIGI, WinLink)**
- **Lenny Rust, W2LJR : DMR Radios & Programming**
- **Ron Block, NR2B : Lightning protection & grounding**
- **Chris Prioli, AD2CS : Kit Building; Antenna Building; Radio Programming; PC and Electronic Troubleshooting; ham radio licensing & studying**
- **John Zaruba Jr, K2ZA : Yaesu System Fusion Radio Programming, POTA, SOTA**
- **Jerry Barnish, K2EAB : Radio Astronomy**
- **Mike Thompson, KG4JYA : Radio Astronomy; VARA (HF and FM); WinLink**
- **Steve Farney, W2SEF : WSJT-X; FT-8; LoTW; TQSL; Grid Square**
- **Carl Wittig, N2CRW : Audacity® Audio Editor**
- **Gary Mirkin, WA3SVW : FLDIGI; MMSSTV**
- **Jon Pearce, WB2MNF : Satellite Communications**
- **Frank Romeo, N3PUU : Toilet Installer; Jack-Of-All Trades - Master Of None**
- **John Hill, W2HUV : Local & Remote W2MMD HF Station Operation, Training & Support**
- **Dave Sheppard, W2PAX : National Traffic System**



Regional Skywarn Websites For On-Line And In-Person Training Classes

Philadelphia/Mt Holly Skywarn : www.weather.gov/phi/skywarn

State College, PA Skywarn : www.weather.gov/ctp/skywarn

Pittsburgh, PA Skywarn : www.weather.gov/pbz/skywarn



Goliathon Obstacle Challenge

June 1, 2024

Gloucester County 4-H Fairgrounds

More information can be found at :

<https://www.goliathon.com>



Museum Ships Weekend 2024

0001Z June 1 through 2400Z June 2, 2024

The Battleship New Jersey Amateur Radio Club is sponsoring the Annual Museum Ships Weekend Event

Go to www.nj2bb.org/museum for more information



Full Strawberry Moon, Friday, June 21, 2024 @ 2110 Hours

Used by the Algonquin, Ojibwe, Dakota, and Lakota peoples, among others, this name came about because ripe strawberries were ready to be gathered at this time. Similarly, Berries Ripen Moon is a Haida term. Blooming Moon (Anishinaabe) is indicative of the flowering season. The time for tending crops is indicated by Green Corn Moon (Cherokee) and Hoer Moon (Western Abenaki). Eighteenth-century Captain Jonathan Carver wrote that Native Americans whom he had visited used the term Hot Moon. The Tlingit used the term Birth Moon, referring to the time when certain animals are born in their region. Egg Laying Moon and Hatching Moon are Cree terms for this period.

Old Farmer's Almanac - www.almanac.com



The Annual 13 Colonies Special Event Organizers Are Looking For Amateur Radio Volunteers

The event honors the 13 original British colonies that rebelled against Great Britain and founded the United States of America in July 1776. The event will use all amateur radio frequencies and modes, and it runs from July 1 to 7, 2024. During this time, there will be special event stations on the air corresponding to each of the 13 colonies, in addition to two bonus stations with 1 x 1 call signs. Volunteers will need to be available to work for several hours on each of the seven days, and they will need to maintain a log using a computer.

The deadline for volunteer applications is May 1, 2024. All applications should be emailed to Larry Krainson, W1AST, at : wb1dby@gmail.com. Anyone participating in the event can receive a certificate by working any of the 13 colony stations, and a clean sweep certificate will be available for those who work all 15 stations. In 2023, the Massachusetts station, K2H, made 19,209 contacts. For more information, visit the **13 Colonies Special Event** (<http://13colonies.us>) website.

Article Credit : The ARRL Letter for April 4, 2024 - www.arrl.org

The US Original 13 Colonies Amateur Radio Society Presents The 16th Annual:

13 Colonies Special Event = 2024

July 1st - 7th

Citizen Soldiers - State Militias - Minute Men



K2A*

NEW YORK



K2B*

VIRGINIA



K2C*

RHODE ISLAND



K2D*

CONNECTICUT



K2E*

DELAWARE



K2F*

MARYLAND



K2G*

GEORGIA



***K2H**

MASSACHUSETTS



***K2I**

NEW JERSEY



***K2J**

NORTH CAROLINA



***K2K**

NEW HAMPSHIRE



***K2L**

SOUTH CAROLINA



***K2M**

PENNSYLVANIA



In Recognition For Participation In This 4th Of July Week 13 Colonies Special Event, This Certificate Is Awarded TO Amateur Radio Station:

GB13COL



KU2US



TM13COL



CONTACTS

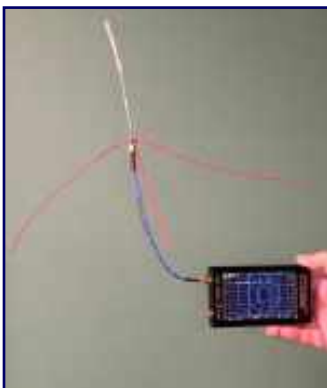
13

CLEAN SWEEP

Sheldon Parker, K2MEN Comments : Tech Saturday Forum, May 4, 2024

"Parking was at a premium this morning for the monthly Tech Saturday event. What's going on? Turns out Chris Prioli, AD2CS, was leading another class project which attracted so many participants I couldn't find a seat! WOW! What a nice event. Coffee, cookies, and a bunch of hams doing one of the things we do best. Building and learning. It's such a pleasure to witness Club growth and participation in events like this. An unrelated event even spilled outside despite the threat of rain. Let's keep it going!"

Tech Saturday Forum : Building & Testing a 70cm Ground-Plane Antenna



2024 Dayton Hamvention

By Robert Pantazes, W2ARP

More Hamvention pictures from W2ARP on the Club Member News webpage
<https://gloucestercountync.org/weebly.com/club-member-news.html>

Greene County Fairgrounds in Xenia Township, Ohio. The theme this year is “Expanding our Community”. The community is Amateur Radio groups showing a non-ham the hobby, helping them get licensed and the most important, Mentoring them. There was over 150 exhibitors and hundred of private people selling every type of radio gear. I am sure you could find a rig from your youth being displayed.

The biggest news was Flex Radio introducing the 8000 series radio. The 8000 has more computing power to open up more features.



Dayton Hamvention - Continued on page 34



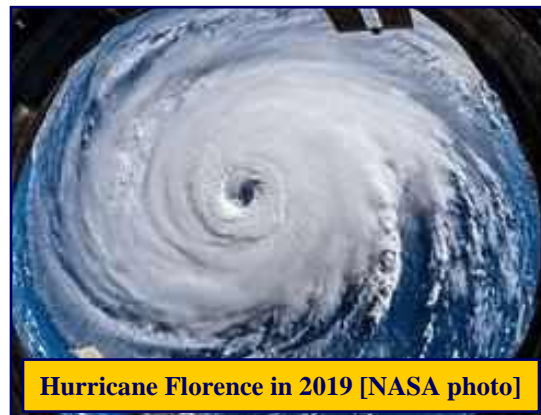
Gordon West WB6NOA At The ARRL



Active Hurricane Season Predicted For 2024

Colorado State University (CSU) hurricane researchers predict an active Atlantic hurricane season (June 1 to November 30) in their initial 2024 forecast.

ARRL Director of Emergency Management Josh Johnston, KE5MHV, attended the National Hurricane Conference in Florida in late March, where the CSU prediction was issued. "The common discussion at the National Hurricane Conference this year was the potential for a very active year, and the forecast from CSU enforces that thought," said Johnston. "Several of the forecasters were pointing to indications that we are moving from an El Niño to a La Niña and that could potentially cause a more active season."



Hurricane Florence in 2019 [NASA photo]

The **CSU Tropical Weather & Climate Research** (<https://tropical.colostate.edu>) team predicts 23 named storms during the Atlantic hurricane season. Of those, researchers forecast that 11 will become hurricanes and five will reach major hurricane strength, as measured by the **Saffir-Simpson Hurricane Wind Scale** (<https://www.nhc.noaa.gov/aboutsshws.php>), with sustained winds of 111 mph or greater. The prediction is above the 30-year average for hurricanes and storms and is above the total of 20 storms, seven hurricanes, and three Category 3 or higher hurricanes in 2023.

Senior Research Scientist in the Department of Atmospheric Science at CSU and the lead author of the report Phil Klotzbach said, "So far, the 2024 hurricane season is exhibiting characteristics similar to 1878, 1926, 1998, 2010, and 2020. Our analog seasons were all very active Atlantic hurricane seasons."

The team predicts that 2024 hurricane activity will be about 170% of the average season from 1991 - 2020. By comparison, 2023's hurricane activity was about 120% of the average season. The report also includes the probability of major hurricanes making landfall, including a 62% probability for the entire US coastline. The average landfall from 1880 - 2020 was 43%.

The report also indicates increased landfall probabilities of 34% for the East Coast of the US, including the Florida peninsula (the average from 1880 - 2020 was 21%); 42% for the Gulf Coast, from the Florida panhandle westward to Brownsville (the average from 1880 - 2020 was 27%), and 66% for the Caribbean (the average from 1880 - 2020 was 47%).

The National Weather Service (NWS), National Hurricane Center (NHC), and Hurricane Watch Net (HWN) are prepared for an active hurricane season. Amateur radio operators can take part in activations on 14.325 MHz during the day and on 7.268 kHz at night. As propagation changes, the HWN may operate both frequencies simultaneously.

At the Florida conference, Johnston also highlighted the relationship between **ARRL and the Federal Emergency Management Agency (FEMA)** - <https://www.arrl.org/news/arrrl-and-fema-sign-agreement-ham-radio-is-as-relevant-as-ever>), as well as ARRL's position as a net control station within the **SHARED RESOURCES High Frequency Radio Program (SHARES)** - <https://www.cisa.gov/resources-tools/programs/shared-resources-shares-high-frequency-hf-radio-program>) managed by the Cybersecurity and Infrastructure Security Agency.

"Now is the time to prepare for emergencies of any type by building relationships, training and refreshing skills, and testing and preparing equipment," added Johnston.

Article Credit : The ARRL Letter for April 11, 2024 - www.arrl.org



Amateur Radio Saves Family In Death Valley National Park

Death Valley National Park is in a remote desert in southern California, where mobile phone networks are spotty at best. On Saturday, April 6, a radio amateur and his family were enjoying the park when their vehicle became stuck in mud in a dangerous area. Without access to a cell network, the ham called for help on the 10-meter band.



According to a news release from the Black Swamp Amateur Radio Club, Caleb Gustwiller, KD8TGB, jumped into action.

Gustwiller was monitoring from Ohio when he picked up the distress call. He was able to hear the call sign and the general location of the ham in distress. He lost the signal to the noise, so he wrote a post in the Parks on the Air® Facebook group asking for other hams to listen for the calls.

Several hams contacted emergency officials in southern California, which led to the ham and their family being rescued within a few hours by park rangers. The club stated in their Facebook post: "Without Caleb hearing this distress call, it could have quickly become a very deadly situation for the operator and his family."



Much of Death Valley National Park sits below sea level, surrounded by terrain. [Sierra Harrop, W5DX, photos]

Article Credit : The ARRL Letter for April 11, 2024 - www.arrl.org





Volunteer Monitor Program Report - February 2024

The Volunteer Monitor (VM) Program is a joint initiative between ARRL and the FCC to enhance compliance in the Amateur Radio Service. This is the February 2024 activity report of the VM Program.

- Operators in Indiana and North Carolina received advisory notices for improper bandwidth. The operators were transmitting over 6 kHz wide. Section 97.307(a) of Commission rules states that no station shall occupy more bandwidth than necessary for the information rate and emission being transmitted.
- An operator in Indiana received an advisory notice for deliberate interference on 3.933 MHz, and the matter is under consideration for referral to the FCC.
- Advisory notices were sent to Technician-class operators in Florida, Minnesota, and North Carolina for FT8 operation on 7.074 MHz. Technicians have only CW privileges on 40 meters.
- An advisory notice was also sent to a Technician operator in Arizona for FT8 operation on 15 meters. Technicians have only CW privileges on 15 meters.
- An advisory notice was sent to a licensee in California for interference to a coordinated repeater by his operation of a cross-band repeater, with no identification and no tone control, on the input of the coordinated repeater.
- An operator in California received an advisory notice for operation on a 60-meter frequency not assigned to amateur operators in the United States.
- An operator in Ohio received a commendation for sustained extraordinary efforts in getting elementary students on the air during the School Club Roundup event on 20 meters.
- One case was referred by the FCC to the VM Program for evidence gathering, and one case was referred by the VM Program to the FCC for enforcement action.
- A presentation on the VM Program was given to the Vienna Wireless Society in Vienna, Virginia, on February 9.

The totals for January 2024 monitoring were 2,085 hours on HF frequencies, and 2,599 hours on VHF frequencies and above, for a total of 4,684 hours.

Thanks to Volunteer Monitor Program Administrator Riley Hollingsworth, K4ZDH



Sunday, June 16, 2024



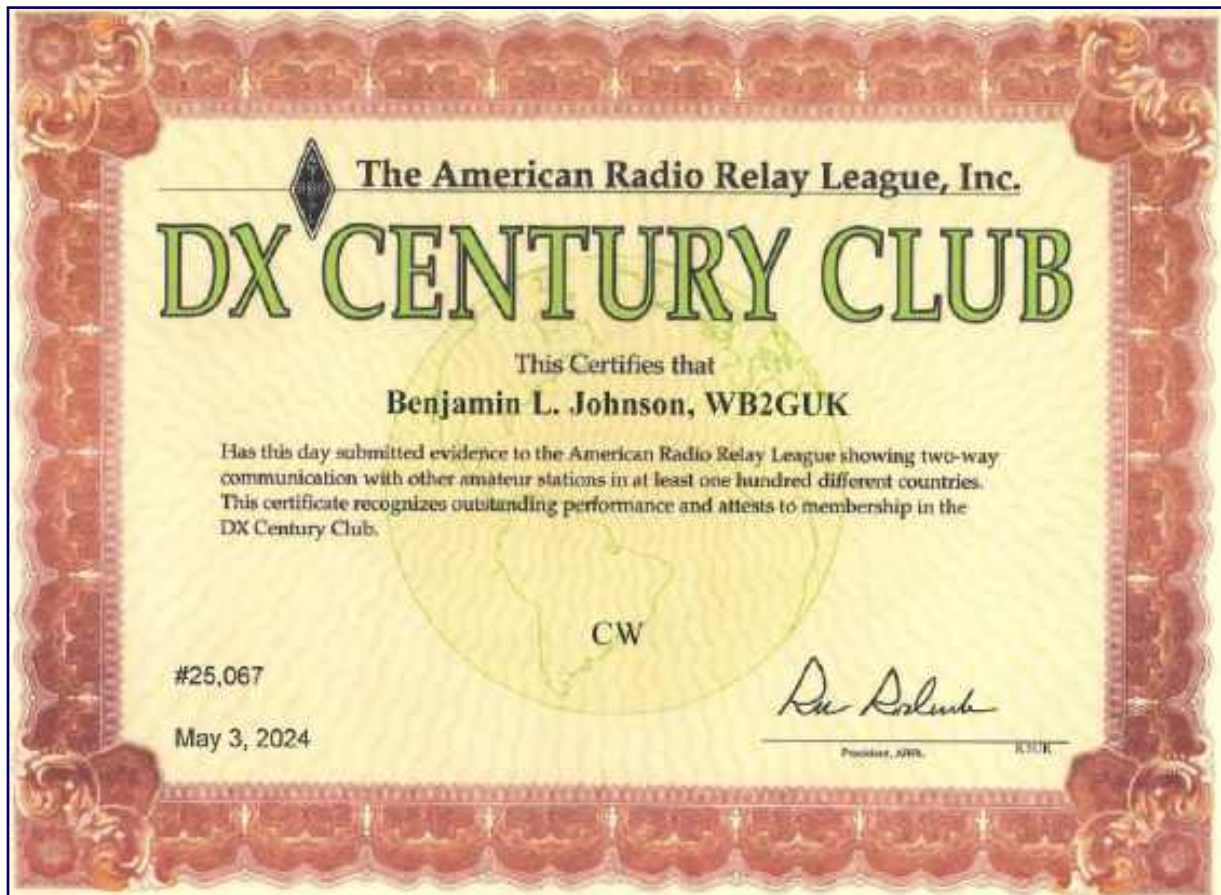
Volunteer Monitor Program Report - March 2024

The Volunteer Monitor (VM) Program is a joint initiative between ARRL and the FCC to enhance compliance in the Amateur Radio Service. This is the March 2024 activity report of the VM Program.

- Operators in Arizona, Tennessee, Virginia, and South Carolina were issued advisory notices concerning wideband operation - 7 kHz to 8 kHz wide, contrary to FCC rules. Section 97.307(a) provides that "no amateur shall occupy more bandwidth than necessary for the information rate and emission type being transmitted, in accordance with good amateur practice."
- Technician-class operators in Colorado and North Carolina received advisory notices for operating FT8 on 20 meters. Technicians have no 20-meter operating privileges.
- An operator in New York received an advisory notice for failure to identify during long transmissions of more than 30 minutes.
- A General-class operator in Idaho received an advisory notice for SSB transmissions on 14.150 MHz. General-class privileges start at 14.225 MHz on that band.
- Operators in Florida received commendations for work on the 146.625 MHz W4JUP Repeater, assisting new licensees team repeater procedures, and setting up equipment. An operator in Oklahoma received a commendation for work on the 146.97 MHz W5BLW Repeater for SKYWARN and emergency operations procedures.
- During March there was one referral from the FCC to the VM Program, and one meeting with the FCC.

The totals for February 2024 monitoring were 1,942 hours on HF frequencies, and 1,935 hours on VHF frequencies and above, for a total of 3,877 hours.

Thanks to Volunteer Monitor Program Administrator Riley Hollingsworth, K4ZDH



Lightweight Paddle Set For CW Operators

By Chris Prioli, AD2CS - chris@ad2cs.com - www.ad2cs.com

This article is a slight departure from my normal writing, in that that the topic at hand here is a description and round-about endorsement of a product. On tap as the subject of this article is the *cwmorse.us* “**Red Lightweight Double Paddle With Steel Base**” (Figure 1). On their website, *cwmorse.us* describes this paddle by stating that it is an...

“...Ultimate Lightning Fast Double Paddle Morse Code Key. Super Smooth Action With Dual Precision Self Lubricating Nylon Bearings. Solid Brass Contacts With Stainless Steel Fasteners & Nickel Plated Steel Spring. All Soldered Braided Copper Wire Connections.”

I was introduced to this paddle by fellow GCARC member **John Zaruba Jr, K2ZA**. It did not take me long to read through the small amount of literature available about the paddle set. I then made the decision to purchase one and to see what all the positive press was about.

Now... I am *not* very capable as regards CW. I am still only learning the requisite skills - both memory and physical - to be able to become competent. However, one of the factors in developing the physical muscle memory to permit Morse competency is having a good, solid, and consistent key system on which to learn. If the key environment is constantly changing, your muscle memory will develop much more slowly as you will be forced to continually re-acclimate yourself to the changing key conditions.

While each CW operator develops his or her own preference as to key type, the paddle system has become quite popular in today's amateur radio CW circles. Part of the reason for this is the ability to quickly and easily inject opposite morse characters into the middle of a continuing stream of base characters. For example, if the operator is sending the string “091”, it would be coded as :

— — — — — — — — — — • • — — — — —

or

dah dah dah dah dah dah dah dah dah dit dit dah dah dah dah

using standard International Morse Code. When sent via a paddle, this is accomplished by holding the right lever for the proper count to send the dahs, lifting as needed for the spaces. Then, when it is time to insert the two dits, simply tap the left lever twice with a lift between them.

Another example might be seen in sending the single character “Q” which consists of the code string *dah dah dit dah*, and is sent by holding the right lever for a four-count, while also tapping the left lever once at the count of three. This will inject a dit between the second and third dahs.



Figure 1 : cwmorse.us Paddle Set

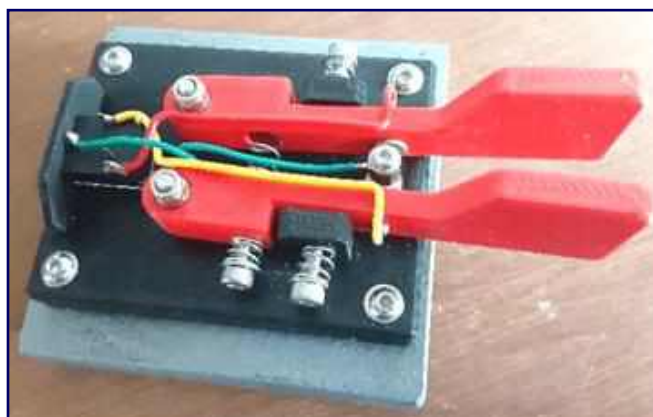


Figure 2 : Paddle With Cover Removed

Lightweight Paddle Set - Continued on page 40

When the new paddle arrived, I immediately set about getting a “*feel*” for the new device. It is well-weighted, so it stays put on the desktop, using four rubber feet to help keep it from sliding around. The connection to the radio is via a 3.5mm (1/8”) TRS jack (**Figure 3**), so if your radio uses a 1/4” key jack, an adapting cable or a plug adapter will be required.

The paddle is comfortable under the fingertips, and is fully adjustable as to travel and tension. Adjustment is made via a trio of stainless-steel socket-head machine screws (**Figure 4**). One of these screws is mounted through the left-hand lever and is the rear-most of the adjustment screws (when viewed from the lever end of the unit). That particular adjustment screw controls the spring tension exerted upon the levers. Tightening the screw increases the spring tension, making the lever action stiffer.

The remaining two screws are mounted, respectively, through the left-hand and the right-hand adjustment stop blocks, and their tips are directly in contact with the side of the lever toward which each screw is pointing. These screws adjust the lever travel by changing the at-rest positions of the levers. The looser the screw, the greater the travel. As a nod to “*attention to detail*”, the Allen wrench required to make adjustments to this paddle set is included with the unit, and it has a convenient storage location machined into the plastic upper base of the paddle, which is visible in the **Figure 3** illustration.

Due to the nature of the paddle design, the three wires of the TRS jack are connected as follows :

- **Tip (T) to right lever (dah) via the RED wire;**
- **Ring (R) to left lever (dit) via the YEL wire; and**
- **Sleeve (S) to common via the GRN wire.**

This is the standard configuration for a right-handed paddle setup. However, if your radio uses the opposite configuration, you will need to place your radio’s paddle setting in reverse mode (if available) or else use an adapting cable that has the wires crossed to accommodate your radio’s key/paddle circuit.

The base of this paddle is a steel plate 1/2” thick and three inches square. All edges and corners are killed so that there are no sharp aspects to this base. The remainder of the unit, apart from the TRS jack, the wire, and the hardware, is all of the 3-D print manufacturing process. Even the cover that snaps on over the works is a 3-D printed item. When we think of 3-D printing as a manufacturing method, we often think of the product as being of lesser quality somehow. That is clearly **not** the case as regards this paddle. All of the parts are cleanly made and they all fit - and work - together quite well.

The paddle is available in several different colors, including army green, black, blue, green, grey, indigo, orange, purple, red, and yellow. The price for the basic paddle is \$42.95, while the price of the paddle with the steel base is \$64.95. The base is available as an accessory for \$24.95. The web address for the sales site is <https://cwmorse.us>.



For those who are able to interpret it, there is a message in the label (**Figure 5**) that is affixed to the top cover of each paddle sold by this company... only it is actually printed in Morse. It says “*USA*” – the location in which all of this company’s products are proudly manufactured.



Figure 3 : Connection End View



Figure 4 : Adjustment Screw Arrangement

Gloucester County Amateur Radio Club

General Membership Meeting Minutes

Wednesday, May 1, 2024



Meeting opened at 1900 Hours by President Jon Pearce, WB2MNF with the Pledge of Allegiance to the Flag

Attendance :

- In Person : 39
- Zoom : 16

Visitors :

- Spencer Webb, W2SW
- Steven Golson, W1SEG

New Members :

- James Beury, Associate Member, Sewell, NJ
- Richard Bleda KC2SGR, (Returning Member), Vineland, NJ
- James Simeone KC2AOF, (Returning Member), Sewell, NJ

Announcements :

- Tech Saturday 5/4 "Tuning Antennas with a VNA"
- Zoom TechNet 5/6 "Antenna Modeling Software" with **Jim Wright N2GXJ**
- **John Zaruba Jr K2ZA** requests that Field Day shirt orders be sent in as early as possible as material need to be ordered. He would like to have shirts completed and delivered by the June 2024 General Membership Meeting. E-mail him at the address on the roster to order.

Upcoming Events :

- Delaware Valley Radio Association Hindenburg Special Event Station 5/4-5/11
- International EME Conference at The College of New Jersey, Trenton, NJ. 8/9-8/11
- ARRL Field Day 6/22-6/23 **Jon Pearce WB2MNF** reminded members that this event is fast approaching and the Club is planning on running in the 8A class.

Member Activities :

- **John Zaruba Jr K2ZA** reported on portable radio activities on a recent trip to Gettysburg National Military Park.

Treasurer's Report :

- Year to Date Income and Expenses

Motion to approve the Treasurer's report passed by voice vote of members present.

Clubhouse Report :

- **Al Arrison KB2AYU** reported that work is commencing on construction of the VHF towers bases.

May 2024 General Membership Meeting Minutes - Continued on page 42

DX and Contests :

- **Tony Starr K3TS** was unable to attend. **Jon Pearce WB2MNF** noted the report that is published in the CrossTalk.

Technical Committee :

- **Jon Pearce WB2MNF** discussed the operation of the Clubhouse GOES station and how to assemble one of your own at home. He also reported on Meshtastic system developments.

Education Committee :

- **Chris Prioli AD2CS** reported licensing classes are now underway.
- If you are considering attending the Advanced Surface Mount Soldering Class scheduled for July 8, 2024, please sign up now! Materials need to be ordered soon.

Public Service :

- **Bob Keogh KD2NEC** reported on developments with the American Red Cross Communications Trailer project.

GCARC Foundation :

- **John O'Connell K2QA** reported on account balances for Foundation funded IT projects at the Clubhouse.

Old Business : None

New Business : None

Closing Remarks : None

Presentation : "Irreverent Antennas" with Spencer Webb W2SW

Meeting adjourned @ 1955 Hours.

**Respectfully submitted,
John Zaruba Jr, K2ZA
Recording Secretary**



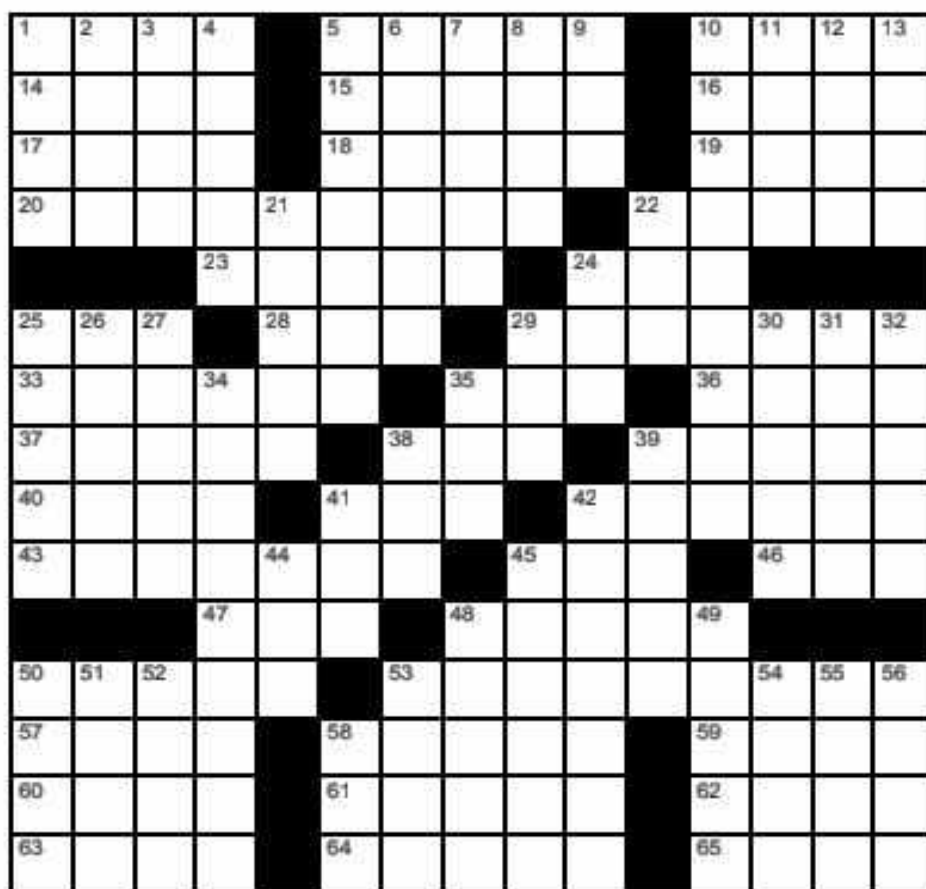
**Blues, Wine & BBQ
June 22 - 23, 2024
1200 to 1700 Hours
Gloucester County 4-H Fairgrounds**

**More information can be found at :
<https://newjerseywineevents.com/events/blues-wine-bbq-mullica-hill>**

Pins

Across

1. Tube connection*
 5. Close-knit group
 10. Tube conn.*
 14. Verdi opera
 15. Ten-Tec rig
 16. Ten-Tec rig
 17. After-bath powder
 18. Kazakhstan prefix
 19. Bushel quarter
 20. With 53 across,
 describes the * words
 22. Analyze syntactically
 23. Window alternative
 24. ARRL org. pertaining
 to SS, others
 25. Beast of burden
 28. Turner of TV channels
 29. Platform on a ship's
 mast (a place for a /MM
 antenna?
 33. Odwalla fruit and ____



Crossword Puzzle courtesy of <https://www.w2pa.com/Home/articles/crossword-puzzles>

35. Not brilliant
 36. Best kind of tower
 37. New England net
 38. Transistor conn.*
 39. Singer Ronstadt
 40. UA assembly
 41. Cutter
 42. Digital mode
 43. Delta follower
 45. YLRL non-member
 46. "____ we having fun
 yet?"
 47. Caller for calls
 48. T8 land
 50. RG8 ground
 53. See 20 across
 57. CW
 58. Thorny
 59. 7800 maker

60. H.S. tests
 61. Cycle user
 62. Put one's foot down?
 63. Transistor conn.*
 64. TI land first name
 65. D.C. group

Down

1. Tube or Transistor
 connection*
 2. EP coin
 3. Like some chatter
 4. S2 capital, old-style
 5. Swift horse
 6. Noted traitor
 7. Device with only a 25
 down and 10 across
 8. Recent UA prefix,
 especially, e.g. M-V Is.
 9. W1 dir. from W7
 10. Just fine
 11. Part of ARRL (abbr.)
 12. Ckts. for 42 across use
 13. Go backpacking
 21. Ten-Tec amplifier
 22. Golfer's goal
 24. Computer port type
 25. Tube connection*
 26. Gray line time
 27. Flower towers
 29. Tube conn.*
 30. JA poem
 31. OOTC member, to an
 OTC member, probably
 32. Tube connection*
 34. Smartest
 35. Jones' partner
 38. Plains states NTS org
 39. KH6 porch

41. The only CW most
 people know
 42. KH5 land
 44. CRT successor
 45. OJ0 reef
 48. What output power
 does, in resonance
 49. Ohms, volts, and others
 50. Transistor connection*
 51. Drift
 52. Prefix with VOX
 53. Kenwood, once
 54. Antenna farm unit
 55. "Crazy" bird
 56. Tiny parts
 58. Big G SW org.

Answers on Page 54

Gloucester County Amateur Radio Club

Board of Directors Meeting Minutes

Wednesday, May 15, 2024



Meeting opened @ 1900 Hours by President Jonathan Pearce WB2MNF

Attendance :

- **President** Jon Pearce WB2MNF : **Present**
- **Vice President** Ron Block NR2B : **Present**
- **Treasurer** John O'Connell K2QA : **Present**
- **Recording Secretary** John Zaruba Jr K2ZA : **Present**
- **Corresponding Secretary** Mike Resnick N2WOQ : **Present**
- **Director (2022-2024)** Jeffrey Garth WB2ZBN : **Present**
- **Director (2022-2024)** Frank Romeo N3PUU : **Present**
- **Director (2023-2025)** Chris Prioli AD2CS : **Present**
- **Director (2023-2025)** James Wright N2GXJ : **Present**
- **Director (2024-2026)** Al Arrison KB2AYU : **Present**
- **Director (2024-2026)** Bill Price NJ2S : **Present**
- **Trustee (2021-2024)** Carl Wittig N2CRW
- **Trustee (2022-2025)** Charles Lanard KD2EIB
- **Trustee (2023-2026)** Sheldon Parker K2MEN
- **Trustee (2024-2027)** Len Rust W2LJR
- **Member** Bruce Canino KD2LBU : **Present**
- **Member** Mike Thompson, KG4JYA : **Present**

New Member Applications :

- **Diane Amico**, Associate Member, Vineland, NJ.
- **Kerri Lynn Caguiat, KE2DKD**, Technician Class, Sicklerville, NJ.
- **William DeCuzzi, KD2KZW, (Returning Member)**, Technician Class, Runnemede, NJ.
- **Anish James**, Associate Member, Mount Laurel, NJ.
- **Phillip Lizzi, AD2HU**, Amateur Extra Class, Deptford, NJ.
- **Angela Metzger**, Associate Member, Vineland, NJ.
- **Linda Murphy, KD2RVH, (Returning Member)**, Technician Class, Runnemede, NJ.
- **Ronald Newman**, Associate Member, Millville, NJ.
- **Rosemarie Newman**, Associate Member, Millville, NJ.
- **Sheree Revilla**, Associate Member, Woodbury, NJ.
- **Thomas Schmitt**, Associate Member, Franklinville, NJ.
- **Jacob Scholz**, Associate Member, Williamstown, NJ.
- **David Strout Sr, W2YC, (Returning Member)**, Amateur Extra Class, Williamstown, NJ.
- **Rose Williams**, Associate Member, Audubon, NJ.

Treasurer's Report :

- YTD Income : \$12,496.30
- YTD Expenses : \$3,562.98
- Net : \$8,933.32

May 2024 Board of Directors Meeting Minutes - Continued on page 45

Remarks :

- **John O'Connell K2QA** discussed where the Club finances are versus budget.
- Detailed financial statements are available for member review upon request.
- Treasurer's report approved by voice vote of Club Officers present.

Membership Committee :

- New member applications approved by voice vote of Club officers present.

Clubhouse Report :

- **Al Arrison KB2AYU** and **Frank Romeo N3PUU** reported on developments with the VHF tower base and anticipated concrete pour along with RF grounding plan.
- **Jon Pearce WB2MNF** and **Mike Thompson KG4JYA** discussed EchoLink server issues.

Repeater Committee : No report.

Programs and Activities :

- **Spencer Webb W2SW's** presentation at the last General Membership Meeting was very well received.
- Discussion of getting him back for another meeting.

Technical Committee :

- **Jon Pearce WB2MNF** discussed technical developments with balloon launch project.
- Kudos to **Jim Wright N2GXJ** for his antenna modeling presentation on the GCARC ZOOM TechNet.
- June ZOOM TechNet will be on WSPR in preparation of the upcoming balloon launch.
- **Steve Farney W2SEF** will be presenting a ZOOM TechNet WSJT-X/FT8 class starting Monday, May 20th. The classes take place on 3-4 Monday nights at 7:30 pm.

Club Radio Nets :

- The 10 Meter is going on Tuesday and Thursday nights at 7:30 pm.
- The April 2M nets averaged 8 check-ins for both the Tuesday Afternoon and Thursday Night nets

Education Committee :

- **Chris Prioli AD2CS** discussed the upcoming Dual Band J-Pole antenna construction on June 8th and Surface Mount soldering classes on July 8th.

Field Day :

- Discussion of food logistics.

Old Business :

- GCARC will provide the 4H with Wifi for the ticket booth.
- Reminder to think about nominees for the Volunteer Appreciation Award for June BoD meeting.

New Business :

- Discussion of Red Cross communications trailer and it's attendance at Field Day.

Meeting adjourned @ 1953 Hours

Respectfully Submitted,

John Zaruba Jr K2ZA Recording Secretary

To Be Added To The DX HONOR ROLL,
Please contact Ernest Kraus, KD2EAV
meanddelcanotc@verizon.net



Happy Birthday : June 23, 1939

Name/Callsign	DXCC
Bill Grim, W0MHK	352
Dave Strout, W2YC	349
Edward De Fonzo, W2DE	339
Darrell Neron, AB2E	335
Bob Pantazes, W2ARP	290
John Hill, W2HUV	271
Gary Castellini, N2IEC	264
Vinnie Sallustio, N4NYY	262
Ken Denson, WB2P	248
Sheldon Parker, K2MEN	245
Jim Wright, N2GXJ	242
Tony Starr, K3TS	231
Dennis Sandole, K2SE	204
Howard Marder, WA2IBZ	154
Art Strong, KA0WS - New Entry	144
Eric Morris, N2BRJ	144
Steve Farney, W2SEF	141
Phil Nunzio, WA3RGY	137
Rich Subers, W2RHS	124
Marc Federici, WM2Y	116
Bart Kleczynski, AC2PT	106
Chuck Capasso, WB2PGE	103
Harry Strahlendorf Jr, W3DNQ	87
Jim Clark, KA2OSV	71
Lee Marino, N2LAM	62
Updated As Of 05/20/2024	

Hmm...It's Saturday and you want to know if someone is at the Clubhouse? Why not call and find out! What!!!

W2MMD Clubhouse : (856) 244-6914

(Please, no free solar panel calls!)



June Birthdays

*Congratulations To Our Members Who Are
Celebrating A Birthday This Month*

Andreas Asch, N2MVD
Albert Christopher, KD2PDW
Kenny Denson, WB2P
Glenn Dougherty, N2YIO
Glen Guenther, KE2BUO
Peter Harow, W2QB
Dave Paster, AC2IQ
Chris Prioli, AD2CS
Melissa Seidner, KE2BEK
Gregg Valentine Sr, KD2VBH

In Memoriam : June Birthdays

Joseph Anlage, W2PH
Joseph Arsenault, WA2KDV
Joshua Brehm Sr, AE2L
Raymond Buirch, KB2BIG
John Cliver III, N2NLE
Edwin Datz Sr, N2PJV
Harry Gindhart, KE3SN
Helmut Leibfarth, WA2LTY
Robert Marshall, N2BDH
Philip Mattison, WA2WOD
Kenneth Newman, N2CQ (President 1970)
Ralph Ralls Sr, WA2CVW
Arthur Roberts, W2UNI
Raymond Schnapp, WB2NBJ
(President 2001 - 2004)
Charles Sketchley, K2PQD
Francis Snyder, WB2TKN



6th Annual ARRL SNJ Section Convention



Celebrating Our 65th Year

www.w2mmd.org

Presented By The

**Gloucester
County
Amateur Radio
Club**

W2MMD



Open To The Public At 8:00 AM : *Rain or Shine*

46th Annual Hamfest : Sunday, September 8, 2024

ADMISSION : \$10.00

Non-Ham Spouses and Kids FREE

*Vendors and Tailgaters of new and used
radio and electronic equipment*

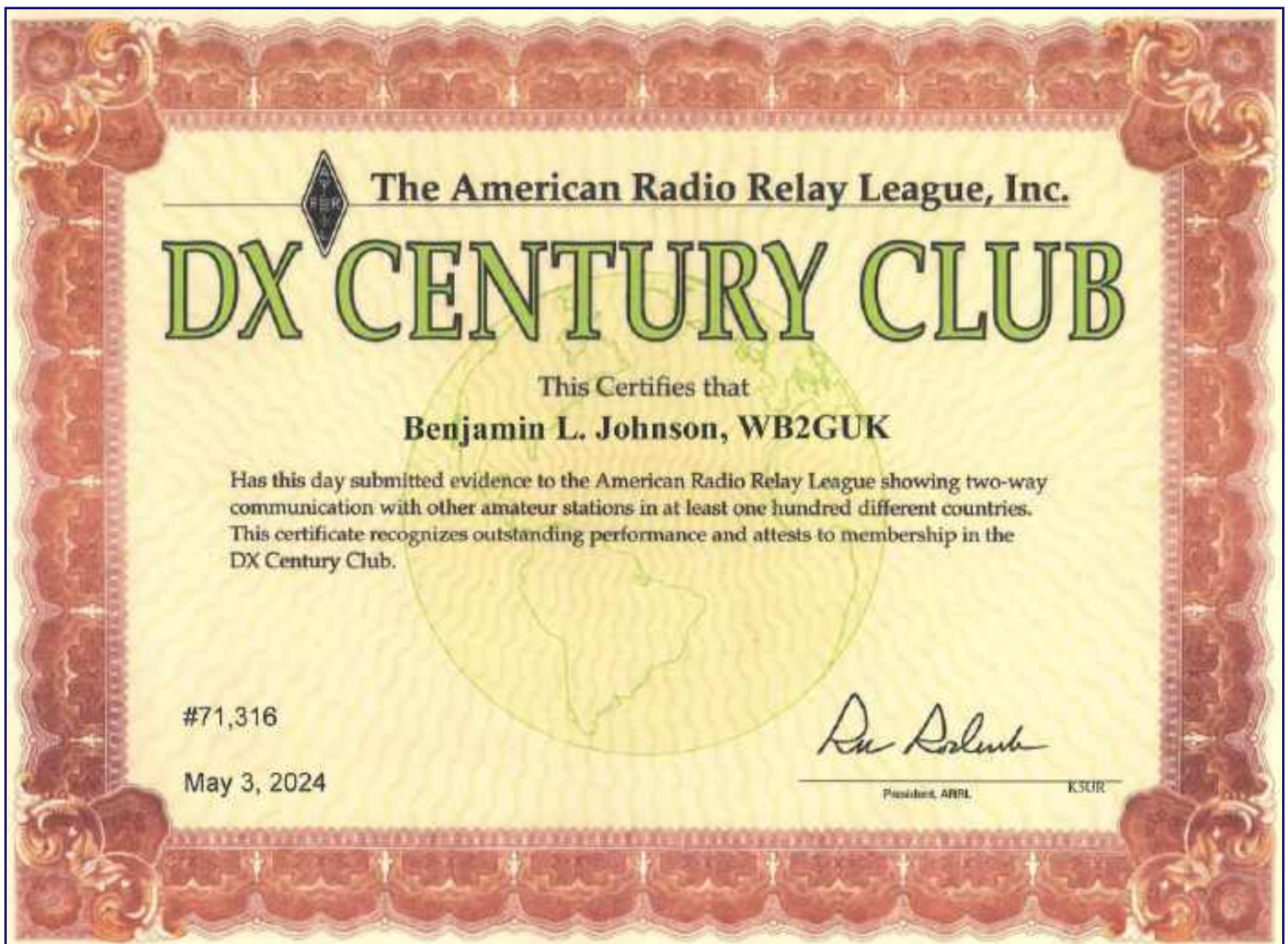


Glenn Dougherty, N2YIO

The Jersey String Band is starting to get ready for New Years 2025. Our theme concept is going to be Spies. We will have the first music rehearsal with our arranger Tom Fox on either June 20th or June 24th, whatever is the best for most of the band. We are getting an early start this year, they have already had drawings made up of what they want the costumes to look like so they can be submitted to the costume maker. In the meantime the band is working hard on making the money for these things.

We have three June parades so far. On Saturday June 8, 2024, we have a parade in the morning in Stafford NJ for their Founder's Day. Then in the afternoon we will head down to North Wildwood Seaport Pier for the Philadelphia Mummers String Band Association 4th Annual Luau Palooza fundraiser. If anyone is interested, tickets are \$20 and food and drink specials are included. You can order tickets from the Association by going to their website : <https://www.pmsba.org>.

We start our July 4th parades on June 30th this year in Magnolia. The parade starts at 6pm. Well that's it for June. Hope the Club has a great Field Day.



OMARC The Ocean-Monmouth Amateur Radio Club

SPRING HAMFEST



Saturday, June 1, 2024

7:30 am - 1pm

(rain or shine)

Our New and Improved Location

**The Spring Lake Heights
Fire Company No. 1**

**700 Sixth Avenue
Spring Lake Heights, NJ 07762**

(1 block from Spring Lake railroad station on the Bay Head NJ line)

Coordinates: +040.1494 -074.0369

Parking on Street

Vendors arrive at 7am

Outside Tables: \$10

Tables under Pavilion: \$15

Electric Available

Coffee and Donut FREE with Table

Club Table (with steep discounts)

FREE FOR ALL Table

Event Opens 7:30am

Admission Fee: \$5

Kids 12 yrs and under FREE

Food & Drinks Available

DOOR PRIZES



VE Session - 10am in Meeting Room

VE Contact: Ken Brockel - WA2FPB

908-309-3436 KHBROCKEL@VERIZON.NET

Call in on 145.110, -600 CTCSS 127.3

For additional info call

Co-Chairman Joe Kruszewski KC2SVS

Cell: 732-618-5328 joekru1@hotmail.com

www.N2MO.ORG

**Save
The
Date**

**2024
Gloucester
County
4-H Fair**

**July 25-28, 2024
Rt 77 Mullica Hill, NJ**



**TRAVEL THE WORLD
WITH 4-H**

**For General Information:
Facebook
2024 Gloucester County 4-H Fair
Vendor Information:
vendorsgc4hfair@gmail.com**

ARRL Sweepstakes Contest, SSB 2023
November 18, 2023

Call : AB2E
Operator (s) : AB2E
Station : AB2E

Class : SO Unlimited HP
Class Overlay : Limited-Ant
QTH : SNJ
Operating Time (hrs) : 9

Summary :

Band QSOs

80 : 220
40 : 14
20 : 300
15 : 64

Total : 598 Sections : 85
Total Score : 101,660

Club : Frankford Radio Club

73

Comments :

Rig : FTDX-9000D/OM Power 2000A+

Antennas :

10m/15m/20m Force 12 C3S tribander @ 52ft

40m dipole @ 90ft

75m dipole @ 95ft

Operating time 9 hours. Was only planning to go for a sweep and quit, but got caught up in the fun. Great run on 75m Sat evening, and great runs on 20m Sun afternoon. Finished the sweep Sunday afternoon at 3P when I finally worked ONN, and had a SDG answer my CQ. Great fun as always, CU next weekend in CQWW CW as AB2E/VP9.

73 Darrell AB2E

Contest : SSSSB

Band	QSOs	Pts	Sec	Pt/Q
3.5	220	440	29	2.0
7	14	28	14	2.0
14	300	600	23	2.0
21	64	128	19	2.0
Total	598	1,196	85	2.0

Score : 101,660

1 Mult = 7.0 Q's

CQ Worldwide DX Contest, CW 2023
November 25, 2023

Call : AB2E/VP9
Operator (s) : AB2E
Station : AB2E/VP9

Class : SO(A)AB LP
QTH : VP9
Operating Time (hrs) : 45
Location : Other North America

Summary :

Band QSOs Zones Countries

160 : 137 8 11
80 : 587 15 66
40 : 700 17 75
20 : 620 25 81
15 : 1,203 26 96
10 : 429 20 82

Total : 3,676 111 411
Total Score : 4,603,518

Club : Frankford Radio Club

77

Comments :

Rig : Elecraft K3 (LP entry, 100W + VP9 restricted to LP, HP is not an option there).

Antennas :

160m Inverted V

80m Inverted V

A4S tribander 10,15,20m

Operating time : 45 hours in the chair. Outstanding conditions with the solar flux at 178. However, 10m was somewhat weaker than expected in VP9. 15mm was my hot band, with over 1200 QSOs. Several lifetime milestones were achieved for this contest.

- Highest score ever as a single op in CQWW either mode. (4.6Meg)
- Highest QSO number in a single contest - 3,676.

I am returning to VP9 in Feb for ARRL DX CW and greatly looking forward to it!

73 Darrell AB2E/VP9

Contest : CQWWCW

Band	QSOs	Pts	ZN	Cty	Pt/Q
1.8	137	280	8	11	2.0
3.5	587	1,415	15	66	2.4
7	700	1,636	17	75	2.3
14	620	1,460	25	81	2.4
21	1,203	2,931	26	96	2.4
28	429	1,097	20	82	2.6
Total	3,676	8,819	111	411	2.4

Score : 4,603,518

1 Mult = 7.0 Q's



Friday, June 20, 2024 @ 1651 Hours

ARRL 160 Meter Contest 2023

December 1, 2023

Call : AB2E
Operator (s) : AB2E
Station : AB2E

Class : SO Unlimited HP
Class Overlay : Limited-Ant
QTH : SNJ
Operating Time (hrs) : 2.5
Location : USA

Summary :
QSOs : 135 Sections : 43 Countries : 1
Total Score : 12,012

Club : Frankford Radio Club 81

Comments :
Rig : FTDX-9000D/OM Power 2000A+
Antenna : 160m Inverted L over 100ft tree, HiZ4 RX

Limited time due to family travel. Condx not very good the time I was on. CQ not productive, so most QSOs S&P which at least gave me a good rate.

73 Darrell AB2E

Contest : ARRL160					
Band	QSOs	Pts	Sec	Cty	Pt/Q
1.8	135	273	43	1	2.0
Total	135	273	43	1	2.0
Score : 12,012					
1 Mult = 3.1 Q's					

CQ Worldwide DX Contest, CW 2023
November 25, 2023

Call : K3TS
Operator (s) : K3TS
Station : K3TS

Class : SO(A)AB HP
QTH : SNJ
Operating Time (hrs) : 33
Location : USA

Summary :			
Band	QSOs	Zones	Countries
160 :	6	5	5
80 :	100	13	58
40 :	204	24	87
20 :	254	31	107
15 :	514	32	109
10 :	552	33	110
Total :	1,630	138	476

ARRL 10 Meter Contest 2023

December 9, 2023

Call : AB2E
Operator (s) : AB2E
Station : AB2E

Class : SO Mixed Unlimited HP
Class Overlay : Limited-Ant
QTH : NJ
Operating Time (hrs) : 8
Location : USA

Summary :

Band	QSOs	Mults
-------------	-------------	--------------

CW : 265 121
SSB : 146 95

Total : 411 216
Total Score : 292,032

Club : Frankford Radio Club 83

Comments :
Operating time 8hrs

Many things going on this weekend, but was able to squeeze in 8hrs operating time. Tuned around 2200Z Fri, sounded promising, many strong sigs, especially Africa. Beginning of contest things were suddenly harder, but worked a few. Quit for the night around 0200UTC. Got only 2hrs op time during the Sat and Sun morning runs (about 12-14Z both days). Decided to try Mixed (I usually entered this contest CW only in the past). Wanted to max the score.

73 Darrell AB2E

Contest : ARRL10M						
Band	Mode	QSOs	Pts	S-P	Cty	Pt/Q
28	CW	265	1,060	56	65	4.0
28	USB	146	292	39	56	2.0
Total	Both	411	1,352	95	121	3.3
Score : 292,032						
1 Mult = 1.9 Q's						

Total Score : 2,851,416

Club : Frankford Radio Club 78

Comments :
My biggest score ever, by a lot. Good band conditions combined with reasonably low noise levels helped me beat my goal of 2.5M points. It also yielded DXCC on three bands, another first for me. A new plan for managing my time helped me stop wasting so much of it, and I even got about six hours of sleep on both nights, so I am not exhausted coming away from this effort. Thanks to all for the calls and hope to work everyone again in the next one! Until then, 73. de K3TS

ARRL 160 Meter Contest 2023
December 1, 2023

Call : K3TS
Operator (s) : K3TS
Station : K3TS

Class : SO Unlimited HP
QTH : SNJ
Operating Time (hrs) : 7
Location : USA

Summary :
QSOs : 311 Sections : 49 Countries : 2
Total Score : 32,028

Club : Frankford Radio Club 82

Comments :
With my high local noise levels, and small property, I really have no business even being on 160m in the first place, but I do what I can. Conditions were generally poor, so at least I had plenty of company. Now on to the 10m contest, which promises to be a lot better. Thanks to all for the Q's and hope to work you next week on 10m. 73 de K3TS

Stew Perry Topband Challenge 2023
December 30, 2023

Call : K3TS
Operator (s) : K3TS
Station : K3TS

Class : Single Op HP
QTH : SNJ
Operating Time (hrs) : 5
Location : USA

Summary :
Total : QSOs : 235 Total Score : 450

Club : Frankford Radio Club 87

Comments :
Certainly an odd little contest, if there ever was one. QSO points are based on distance (calculated by grid square), there are no multipliers, and no assisted class; so those few DX contacts that I did make were based entirely on random chance. My goal was to best last year's QSO total of about 300 Q's, but eventually I just got tired of copying the same stations that I worked in the earlier hours of my session. At least I got to give the 160 antenna a good work-out along with the amplifier. Everything held up well. Thanks to all for the Q's and hope to work everyone in the NAQP in a couple of weeks. HAPPY NEW YEAR 2024 and 73!

de K3TS

ARRL 10 Meter Contest 2023
December 9, 2023

Call : K3TS
Operator (s) : K3TS
Station : K3TS

Class : SO Mixed Unlimited HP
QTH : SNJ
Operating Time (hrs) : 10
Location : USA

Summary :
Band QSOs Mults

CW : 327 125
SSB : 24 24

Total : 351 149
Total Score : 202,044

Club : Frankford Radio Club 84

Comments :
A limited, part-time effort between other tasks around the house and yard. Conditions generally good in the daytime, but generally bad in the evening, when I had more time to operate. For a while on Saturday night there were very few signals on the band. Thanks to all for the QSO's and hope everyone has a great holiday season. 73 de K3TS

CWops Test (CWT) 2023 0300Z
November 23, 2023

Call : K3TS
Operator (s) : K3TS
Station : K3TS

Class : Single Op HP
QTH : SNJ
Operating Time (hrs) : 1
Location : USA

Summary :
Band QSOs

80 : 18
40 : 34

Total : 52 Mults : 45
Total Score : 2,340

Club : Frankford Radio Club 76

Comments :
Difficult copy at times, with some signals quite weak. Hopefully conditions improve over the next couple of days. 73 all.

de K3TS

ARRL RTTY Roundup 2024
January 6, 2024

Call : AB2E
Operator (s) : AB2E
Station : AB2E

Class : SO Unlimited HP
Class Overlay : Limited-Ant
QTH : SNJ
Operating Time (hrs) : 2.5
Location : USA

Summary :

Band QSOs

80 : 22
40 : 10
20 : 22
15 : 3
10 : 12

Total : 69 State/Prov : 31 Countries : 8
Total Score : 2,691

Club : Frankford Radio Club

01

Comments :

Rig : FTDX-9000D/OM Power 2000A+
Antennas :
160m - Inverted L over 100ft tree
80m - Dipole @ 95 ft
40m - Dipole @ 90 ft
10/15/20 12 C3S tribander
Operating time 2.5hrs

All s&p. N1MM+ w/ MMTTY
RTTY is fun, need to get better at it.
73 Darrell AB2E
cu in NAQP!

Contest : ARRLRTTY

Band	QSOs	Pts	Sec	DXC	Pt/Q
3.5	22	22	14	1	1.0
7	10	10	5	1	1.0
14	22	22	4	3	1.0
21	3	3	1	0	1.0
28	12	12	7	3	1.0
Total	69	69	31	8	1.0

Score : 2,691
1 Mult = 1.8 Q's

ARRL RTTY Roundup 2024
January 6, 2024

Call : WB2PJH
Operator (s) : WB2PJH
Station : WB2PJH

Class : Single Op LP
QTH :
Operating Time (hrs) : 12
Location : USA

Summary :

Band QSOs

80 : 48
40 : 109
20 : 104
15 : 87
10 : 31

Total : 379 State/Prov : 51 Countries : 41
Total Score : 34,868

Club : Frankford Radio Club

02



Crossword Puzzle Answers From Page 43

W2MMD Clubhouse Test & Repair Bench Equipment and Supplies



A Special Thank You to
Chris AD2CS for donating
the equipment and
organizing these test
benches

- | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none">• YiHua 948 11-in-1 Solder Station• Universal Screwdriver Set• PanaVise PCB vise with full tilt and rotate on parts bin base• 500 Watt Dummy Load• 100 Watt Dummy Load• Heathkit HD-1234 6-position Coax Switch with RG-213 jumpers• Hook-up Wire :<ul style="list-style-type: none">♦ 18 AWG stranded♦ 22 AWG solid and stranded♦ 24 AWG solid and stranded• Bird 4304A Thruline Directional Wattmeter• CMS BE-01 Battery Eliminator 1A/1.5-15V Power Supply• 12 AWG Red/Black Dual Stranded ZIP Wire• Simpson 260 Series 5 Analog Multimeter• CMS ESR-01 Equivalent Series Resistance Meter• Elenco DT-100 Diode & Transistor Tester• TekPower TP50SW 50A/13.8V Power Supply• Elenco XP-720 12.6VAC/5VDC/1.5-15VDC 3A/1A Power Supply• RSR Electronix Express RSR-3040 15VAC/5VD/1.5-15VDC 3A/1A Power Supply• BK Precision 1803D Frequency Counter• KKmoon MHS-5225 Digital Arbitrary Waveform Signal Generator• Exact 121 Analog Signal Generator• Greenlee DM-510A Handheld Digital Multimeter• HP 34410A Benchtop Digital Multimeter• BK Precision 1655 Variable isolated AC Supply | <ul style="list-style-type: none">• CMS Dim Bulb Current Limiter - 100 Watt• CMS BDST-01 Signal Tracer• CMS CRTT-01 Gas-charged Voltage Regulator Tube Tester• Conar 224 Tube Tester• GW LCR-814 LCR Meter• Siglent SDS-1102CML+ Digital Storage Oscilloscope• DX Engineering Coaxial Cable Gripper and Stripper (RG-8U / RG-213)• DX Engineering Coaxial Cable Cutter, Trimmer, and Crimper (RG-8U / RG-213)• DX Engineering RG-8X Die Set for Coaxial Cable Crimper• Adjustable Wrench Set for Slotted/Recessed Round Nuts• Speedwox Miniature Box Wrench Sets, Metric and SAE• 69238 Nut Driver Set, Metric• 69239 Nut Driver Set, SAE• Velleman K-8115 Universal Component Tester• Anderson Powerpole® Connector Assortment• Anderson Powerpole® Crimping Tool• Heat Shrink Tube Assortment, cut lengths• Ring Terminal Assortment• Alignment Tool Set• Craftsman Wire Cutter/Crimper• Craftsman 6-piece Pliers Set• Laptop PC• Programming Cable Sets (2)• Test Lead Set• Oscilloscope Probe Set |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Electronic Tool Tip #7 - Static-Free Tweezers

By Chris Prioli, AD2CS - chris@ad2cs.com - www.ad2cs.com

When handling electronic components, it is necessary to get into the habit of ensuring that the devices are protected from the discharge of static electricity. Static discharge can immediately destroy many components, especially any semiconductor devices of the CMOS type. With the miniaturization of electronics devices and components, it becomes necessary to use tools to lift, handle, and manipulate many components, particularly SMD components. This is where a good set of anti-static tweezers comes into play.

The tweezer set shown here includes high-quality non-magnetic stainless-steel tweezers that are anti-static and non-corroding. This particular set offers nine different tweezer types plus a pair of fine cutters, a wiping cloth, and a carrying pouch to keep everything together, and is called their *nine-piece* set. Also available are two seven-piece sets and individual tweezer models. I use my ESD-11 tweezer from this set literally on a daily basis, and I have found them to be quite durable.



The tweezers aid greatly in the placement of SMD parts onto the printed circuit board (PCB), and the back end of the tweezer is useful for holding the device in place while soldering is being done. Just a little bit of downward pressure on the chip keeps it from walking away while the soldering process occurs.

Tweezers like these are a tool item that any electronics hobbyist should not be without. They are useful for a wide array of tasks, like plucking one particular resistor out of a container or pile of components, or for aligning the holes in a PCB with the mounting holes in an enclosure. A favorite trick of mine is placing washers onto screw threads in poorly accessible locations, and then starting a hex nut on the threads. This is done by inserting the long narrow tip of the ESD-11 tweezer into the center of the hex nut, and then letting the tweezer open to hold the nut on the end of the tweezer. Next, bring the tip of the tweezer into alignment with the end of the screw, and then squeeze the tweezer to allow the hex nut to slide down onto the end of the screw. Then simply reach in there with the tip of a screwdriver, with the tweezer still in place to serve as an axle, and turn the hex nut to begin the thread engagement. A lock washer, for example, can be placed onto the screw threads in the same manner before the hex nut is put into place.

This set is available online from *Amazon*, at a price of \$13.99 (USD) plus shipping if you are not an Amazon Prime member. Of course, the governor has to get his share, so tax will also be applied.

Go to <https://www.amazon.com/dp/B07JMBGL3W> to investigate this item and its companion sets and individual pieces for yourself.

June 2024 Contest Calendar - WA7BNM Contest Calendar : www.contestcalendar.com

June 2024

+ 10-10 Int. Open Season PSK Contest	0000Z, Jun 1 to 2400Z, Jun 2
+ PVRC Reunion	0000Z-0159Z, Jun 1 and 0000Z-0159Z, Jun 2
+ Tisza Cup CW Contest	0200Z-1459Z, Jun 1
+ Wake-Up! QRP Sprint	0600Z-0629Z, Jun 1 and 0630Z-0659Z, Jun 1 and 0700Z-0729Z, Jun 1 and 0730Z-0800Z, Jun 1
+ Kentucky QSO Party	1300Z, June 1 to 0100Z, Jun 2
+ UKSMG Summer Contest	1300Z, Jun 1 to 1300Z, Jun 2
+ RSGB National Field Day	1500Z, Jun 1 to 1500Z, Jun 2
+ IARU Region 1 Field Day, CW	1500Z, Jun 1 to 1459Z, Jun 2
+ ARRL Inter. Digital Contest	1800Z, Jun 1 to 2400Z, Jun 2
+ K1USN Slow Speed Test	0000Z-0100Z, Jun 3
+ ICWC Medium Speed Test	1300Z-1400Z, Jun 3
+ OK1WC Memorial	1630Z-1729Z, Jun 3
+ ICWC Medium Speed Test	1900Z-2000Z, Jun 3
+ ARS Spartan Sprint	0000Z-0200Z, Jun 4
+ Worldwide Sideband Activity Contest	0100Z-0159Z, Jun 4
+ ICWC Medium Speed Test	0300Z-0400Z, Jun 4
+ Phone Weekly Test	0230Z-0300Z, Jun 5
+ A1Club AWT	1200Z-1300Z, Jun 5
+ CWops Test	1300Z-1400Z, Jun 5
+ Mini-Test 40	1700Z-1759Z, Jun 5
+ VHF-UHF FT8 Activity Contest	1700Z-2100Z, Jun 5
+ Mini-Test 80	1800Z-1859Z, Jun 5
+ CWops Test	1900Z-2000Z, Jun 5
+ Walk for the Bacon QRP Contest	0000Z-0100Z, Jun 6 and 0200Z-0300Z, Jun 7
+ CWops Test	0300Z-0400Z, Jun 6
+ CWops Test	0700Z-0800Z, Jun 6
+ NRAU 10m Activity Contest	1800Z-1900Z, Jun 6 (CW) and 1900Z-2000Z, Jun 6 (SSB) and 2000Z-2100Z, Jun 6 (FM) and 2100Z-2200Z, Jun 6 (Dig)
+ SKCC Sprint Europe	2000Z-2200Z, Jun 6
+ NCCC FT4 Sprint	0100Z-0130Z, Jun 7
+ Weekly RTTY Test	0145Z-0215Z, Jun 7
+ NCCC Sprint	0230Z-0300Z, Jun 7
+ HA3NS Sprint Memorial Contest	1900Z-1929Z, Jun 7 (40m) and 1930Z-1959Z, Jun 7 (80m)
+ K1USN Slow Speed Test	2000Z-2100Z, Jun 7
+ VK Shires Contest	0000Z-2359Z, Jun 8
+ Batavia DX Contest	0000Z, Jun 8 to 1700Z, Jun 9
+ Asia-Pacific Sprint, SSB	1100Z-1300Z, Jun 8
+ Portugal Day Contest	1200Z, Jun 8 to 1200Z, Jun 9
+ SKCC Weekend Sprintathon	1200Z, Jun 8 to 2400Z, Jun 9
+ AGCW VHF/UHF Contest	1400Z-1700Z, Jun 8 (144) and 1700Z-1800Z, Jun 8 (432)
+ GACW WWSA CW DX Contest	1500Z, Jun 8 to 1500Z, Jun 9
+ REF DDFM 6m Contest	1600Z, Jun 8 to 1600Z, Jun 9
+ ARRL June VHF Contest	1800Z, Jun 8 to 0259Z, Jun 10
+ K1USN Slow Speed Test	0000Z-0100Z, Jun 10
+ 4 States QRP Group Second Sunday Sprint	0000Z-0200Z, Jun 10
+ ICWC Medium Speed Test	1300Z-1400Z, Jun 10
+ OK1WC Memorial	1630Z-1729Z, Jun 10
+ ICWC Medium Speed Test	1900Z-2000Z, Jun 10
+ RSGB 80m Club Championship, Data	1900Z-2030Z, Jun 10
+ Worldwide Sideband Activity Contest	0100Z-0159Z, Jun 11
+ ICWC Medium Speed Test	0300Z-0400Z, Jun 11
+ NAQCC CW Sprint	0030Z-0230Z, Jun 12
+ Phone Weekly Test	0230Z-0300Z, Jun 12
+ A1Club AWT	1200Z-1300Z, Jun 12
+ CWops Test	1300Z-1400Z, Jun 12
+ Mini-Test 40	1700Z-1759Z, Jun 12
+ VHF-UHF FT8 Activity Contest	1700Z-2100Z, Jun 12
+ Mini-Test 80	1800Z-1859Z, Jun 12
+ CWops Test	1900Z-2000Z, Jun 12
+ CWops Test	0300Z-0400Z, Jun 13
+ CWops Test	0700Z-0800Z, Jun 13

June 2024 Contest Calendar - Continued on page 58

June 2024 Contest Calendar - WA7BNM Contest Calendar : www.contestcalendar.com

June 2024 Contest Calendar - Continued from page 57

+ NCCC FT4 Sprint	0100Z-0130Z, Jun 14
+ Weekly RTTY Test	0145Z-0215Z, Jun 14
+ NCCC Sprint	0230Z-0300Z, Jun 14
+ K1USN Slow Speed Test	2000Z-2100Z, Jun 14
+ All Asian DX Contest, CW	0000Z, Jun 15 to 2400Z, Jun 16
+ Pajajaran Bogor DX Contest	0000Z-2359Z, Jun 15
+ SMIRK Contest	0000Z, Jun 15 to 2400Z, Jun 16
+ LZ International 6-Meter Contest	1400Z, Jun 14 to 1400Z, Jun 15
+ IARU Region 1 50 MHz Contest	1400Z, Jun 15 to 1400Z, Jun 16
+ Stew Perry Topband Challenge	1500Z, Jun 15 to 1500Z, Jun 16
+ West Virginia QSO Party	1600Z, Jun 15 to 0400Z, Jun 16
+ ARRL Kids Day	1800Z-2359Z, Jun 15
+ Feld Hell Sprint	0000Z-2359Z, Jun 16
+ WAB 50 MHz Phone	0800Z-1400Z, Jun 16
+ SARL Youth QSO Party	1200Z-1300Z, Jun 16
+ Run for the Bacon QRP Contest	2300Z, Jun 16 to 0100Z, Jun 17
+ K1USN Slow Speed Test	0000Z-0100Z, Jun 17
+ ICWC Medium Speed Test	1300Z-1400Z, Jun 17
+ OK1WC Memorial	1630Z-1729Z, Jun 17
+ ICWC Medium Speed Test	1900Z-2000Z, Jun 17
+ RSGB FT4 Contest	1900Z-2030Z, Jun 17
+ Worldwide Sideband Activity Contest	0100Z-0159Z, Jun 18
+ ICWC Medium Speed Test	0300Z-0400Z, Jun 18
+ NAQCC CW Sprint	0030Z-0230Z, Jun 19
+ Phone Weekly Test	0230Z-0300Z, Jun 19
+ A1Club AWT	1200Z-1300Z, Jun 19
+ CWops Test	1300Z-1400Z, Jun 19
+ Mini-Test 40	1700Z-1759Z, Jun 19
+ VHF-UHF FT8 Activity Contest	1700Z-2100Z, Jun 19
+ Mini-Test 80	1800Z-1859Z, Jun 19
+ CWops Test	1900Z-2000Z, Jun 19
+ RSGB 80m Club Championship, CW	1900Z-2030Z, Jun 19
+ Walk for the Bacon QRP Contest	0000Z-0100Z, Jun 20 and 0200Z-0300Z, Jun 21
+ CWops Test	0300Z-0400Z, Jun 20
+ CWops Test	0700Z-0800Z, Jun 20
+ NTC QSO Party	1900Z-2000Z, Jun 20
+ NCCC FT4 Sprint	0100Z-0130Z, Jun 21
+ Weekly RTTY Test	0145Z-0215Z, Jun 21
+ NCCC Sprint	0230Z-0300Z, Jun 21
+ K1USN Slow Speed Test	2000Z-2100Z, Jun 21
+ His Maj. King of Spain Contest, SSB	1200Z, Jun 22 to 1200Z, Jun 23
+ Ukrainian DX DIGI Contest	1200Z, Jun 22 to 1200Z, Jun 23
+ ARRL Field Day	1800Z, Jun 22 to 2100Z, Jun 23
+ K1USN Slow Speed Test	0000Z-0100Z, Jun 24
+ QCX Challenge	1300Z-1400Z, Jun 24
+ ICWC Medium Speed Test	1300Z-1400Z, Jun 24
+ OK1WC Memorial	1630Z-1729Z, Jun 24
+ QCX Challenge	1900Z-2000Z, Jun 24
+ ICWC Medium Speed Test	1900Z-2000Z, Jun 24
+ Worldwide Sideband Activity Contest	0100Z-0159Z, Jun 25
+ QCX Challenge	0300Z-0400Z, Jun 25
+ ICWC Medium Speed Test	0300Z-0400Z, Jun 25
+ SKCC Sprint	0000Z-0200Z, Jun 26
+ Phone Weekly Test	0230Z-0300Z, Jun 26
+ A1Club AWT	1200Z-1300Z, Jun 26
+ CWops Test	1300Z-1400Z, Jun 26
+ Mini-Test 40	1700Z-1759Z, Jun 26
+ Mini-Test 80	1800Z-1859Z, Jun 26
+ CWops Test	1900Z-2000Z, Jun 26
+ CWops Test	0300Z-0400Z, Jun 27
+ CWops Test	0700Z-0800Z, Jun 27
+ RSGB 80m Club Championship, SSB	1900Z-2030Z, Jun 27
+ NCCC FT4 Sprint	0100Z-0130Z, Jun 28
+ Weekly RTTY Test	0145Z-0215Z, Jun 28
+ NCCC Sprint	0230Z-0300Z, Jun 28
+ K1USN Slow Speed Test	2000Z-2100Z, Jun 28
+ UFT QRP Contest	0600Z-0900Z, Jun 29 and 1400Z-1700Z, Jun 29

2024 Club Committees

Standing Committees

Budget
 Constitution & By-Laws
 Education
 Field Day
 Hamfest
 Health, Welfare, & Silent Keys
 Hospitality
 Membership
 Membership Badges
 Nominations
 Publicity
Repeaters
 W2MMD Clubhouse Site

Committee Chairs

John O'Connell, K2QA
 Ron Block, NR2B
 Chris Prioli, AD2CS
 Tony Starr, K3TS
 Sheldon Parker, K2MEN and Bill Price, NJ2S
 Bill Price, NJ2S
 Jeff Garth, WB2ZBN
 Chris Prioli, AD2CS
 Chris Prioli, AD2CS
 Jon Pearce, WB2MNF
 Tony Starr, K3TS
Open Chair
 Al Arrison, KB2AYU

Activity Committees

Awards & Certificates
 Club Photographer
 Club Publications & Historian
 Contests
DX
GCARC Family Picnic
 GCARC Foxhunts
 GC-ARES Emergency Coordinator
 Holiday Dinner Party
 License Testing/VEC Liaison
 Membership Roster Database
 Programs : General Membership Meetings
Radio Nets
 Technical, Tech Saturday, & TechNet Programs
 W2MMD License Trustee
 W2MMD Special Event Station

Committee Chairs

GCARC Board of Directors
 Phil Nunzio, WA3RGY
 Jeff Garth, WB2ZBN
 Tony Starr, K3TS
Open Chair
Open Chair
 Jim Wright, N2GXJ
 Bob Keogh, KD2NEC
 Frank Romeo, N3PUU & Kathy Romeo
 Gary Reed, N2QEE
 Jeff Garth, WB2ZBN
 Ron Block, NR2B
Open Chair
 Jon Pearce, WB2MNF
 Darrell Neron, AB2E
 Mark Gottlieb, KK2L

GCARC <at> Mailman <dot> QTH <dot> Net e-mail reflector guidelines

1. No attachments (e.g. pictures, files) are allowed on the reflector.
2. If you have Club-related pictures that you would like to share, you can send them to the webmaster, he will put them on the website and will send out a general e-mail to all the members.
3. Otherwise, the pictures will have to be sent to the members' addresses.
4. URLs/Hyperlinks are acceptable on the reflector.
5. Do not send any messages with e-mail addresses in the **BCC (Blind Carbon Copy)** field. The message will be rejected. Use only the **To:** or **CC:** fields.
6. Members are subscribed to the reflector using the member's e-mail address from the roster database. You must use that address when sending an e-mail via the reflector.
7. If you use another address on the reflector, the message will get rejected or "*bounced*", because the reflector does not recognize that address. Whenever a message sent to reflector is rejected or "*bounced*" for various reasons, the administrator has to log-in to the Mailman.QTH website and approve the message.

The W2MMD Repeaters

2 Meter Repeater

Output : 147.180 MHz

Input : 147.780 MHz

Offset : +600 kHz - PL : 131.8 Hz

(Conventional FM plus C4FM Capability)

EchoLink : W2MMD-R

70 cm Repeater

Output : 442.100 MHz

Input : 447.100 MHz

Offset : +5 MHz - PL : 131.8 Hz

(Conventional FM plus C4FM Capability)

The above repeaters are both
located in Pitman, NJ
GPS : 39.728481°, -75.131088°

1.25 Meter Repeater

Output : 224.660 MHz

Input : 223.060 MHz

Offset : -1.6 MHz - PL : 131.8 Hz

Location : Sewell, NJ

GPS : 39.746738°, -75.077094°

SKYWARN™ Net

Sunday @ 1930 : 147.180 MHz Repeater

Gloucester County ARES Net

Sunday @ 2000 : 147.180 MHz Repeater

GCARC TechNet ZOOM Forum

Available Every Monday @ 1930 Hours

Join ZOOM Meeting Link :

<https://bit.ly/3K8bWwj>

Tuesday Afternoon Net

Every Tuesday @ 1200 Hours

Tuesday & Thursday Night 10M Net

Every Tuesday & Thursday @ 1930 Hours

Tune in on 28.465 MHz or 28.475 MHz

Thursday Night Rag Chew Net

Every Thursday @ 2000 Hours

Meeting Calendar

General Membership Meeting

Wednesday, June 5, 2024

1900 Hours

Pfeiffer Community Center

Simulcast Live on ZOOM

Meeting ID : 943 0211 9674

Passcode : 843147

Join ZOOM Meeting Link :

<https://bit.ly/44P4HCU>

Board of Directors Meeting

Wednesday, June 19, 2024

1900 Hours

W2MMD Clubhouse

*“There’s More To Ham Radio Than
You Can Possibly Do!”*

- K3TS

*“The big thing about being in a club and
being a “Ham” is to help each other
when there is a need ”*

- W2SEF

***** Badges *****

**Need a new or replacement badge
Contact “The Badge Man”**

**Chris Prioli, AD2CS
chris@ad2cs.com**

Question Pool Answers : ESD01:A; ESD02:B; ESD03:D; ESD04:B; ESD05:C; ESD06:D; ESD07:B; ESD08:D; ESD09:B; ESD10:A; ESD11:C; ESD12:B; ESD13:B; ESD14:A; ESD15:D